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169630

Fortune

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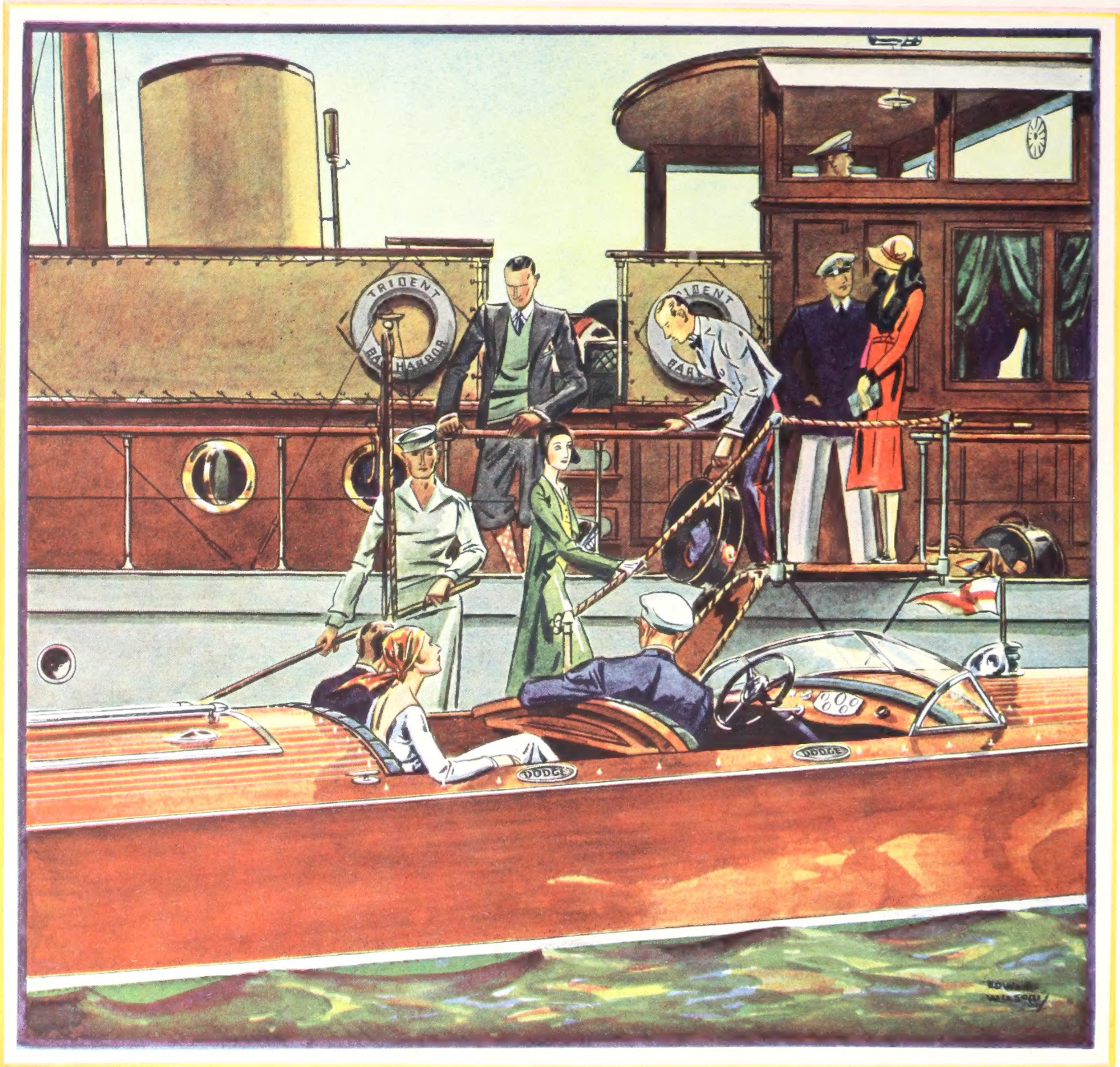


MODEL 3—ILLUSTRATED—25 FT. LONG—SEATS 9—125 H. P., 32 M. P. H.—$2500. OTHER 25-FOOTERS $3200 TO $3900

LIKE all true aristocrats, Dodge Boats are at home in any company ◂ ◂ ◂ ◂ They match quality and beauty with the finest yachts and cruisers ◂ ◂ ◂ ◂ speed and value with the rowdiest outboard on any inland lake ◂ ◂ ◂ ◂ The new Dodge plant, modern from foundation to skylight, is equipped with the newest and most efficient of modern tools ◂ ◂ ◂ ◂ It produces the finest boats that ever bore the name of Dodge ◂ ◂ ◂ ◂ and produces them in quantities so great that they can be priced within the reach of anyone who can afford a motor car ◂ ◂ ◂ ◂ The 16-footer has a speed of 30 miles an hour, and at $945 offers the same inherent quality as the 45-miles-an-hour speedster at $4500 ◂ ◂ ◂ ◂ It is an ideal tender for a larger boat, as is the 21- or even the 25-footer ◂ ◂ ◂ ◂ Each is truly a modern miracle of performance ◂ ◂ ◂ ◂ There's a Dodge dealer near you ◂ ◂ ◂ ◂ See him or write us for the new Dodge catalog

DODGE BOATS

HORACE E. DODGE BOAT & PLANE CORPORATION, Works: Newport News, Virginia. General Sales Department: 21 West 46th Street, New York City

169630

Estate of J. Barstow Smull, Esq., Cold Spring Harbor, Long Island.

It's safer

to insist on Science

THERE is no compromise with Science. Half-truths and vague sentiment have no place in scientific practice. This is why increasing numbers of those who appreciate the value of their trees are engaging Bartlett.

They pay no more for this precaution. But they do get that extra assurance of seasoned judgment and expert practice sustained by the famous Bartlett Tree Research Laboratories in Stamford. Here nothing is done in a hurry for commercial consideration. Here is assembled the accumulated testimony of centuries of research and experience by pioneers of other generations in the study of tree life, destructive insects and tree diseases.

In the light of all previous knowledge the leading scientists who conduct the Bartlett field laboratories are developing a technic and code of practice which are reflected in practical results in enhanced beauty, increased health and longer life for the trees of those we serve.

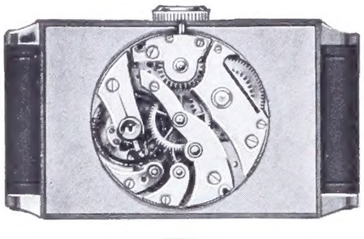
For consultation, address Stamford, Connecticut, or the Bartlett branch office nearest you.

The F.A.BARTLETT TREE EXPERT COMPANY

Operating also the Bartlett School of Tree Surgery, and the Bartlett Tree Research Laboratories

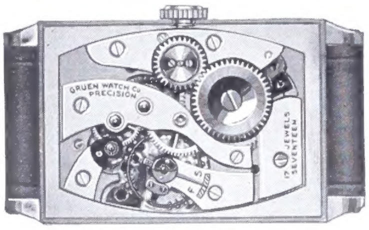
STAMFORD, CONNECTICUT
Branch Offices:
Philadelphia White Plains Boston Rochester, N.Y. Westbury, L.I. Orange, N.J.
Syracuse, N. Y. Chicago (*Evanston*) Danbury, Conn. Pittsfield, Mass. Wilmington, Del.

YOU MEN who want *pocket-watch accuracy* on your wrist

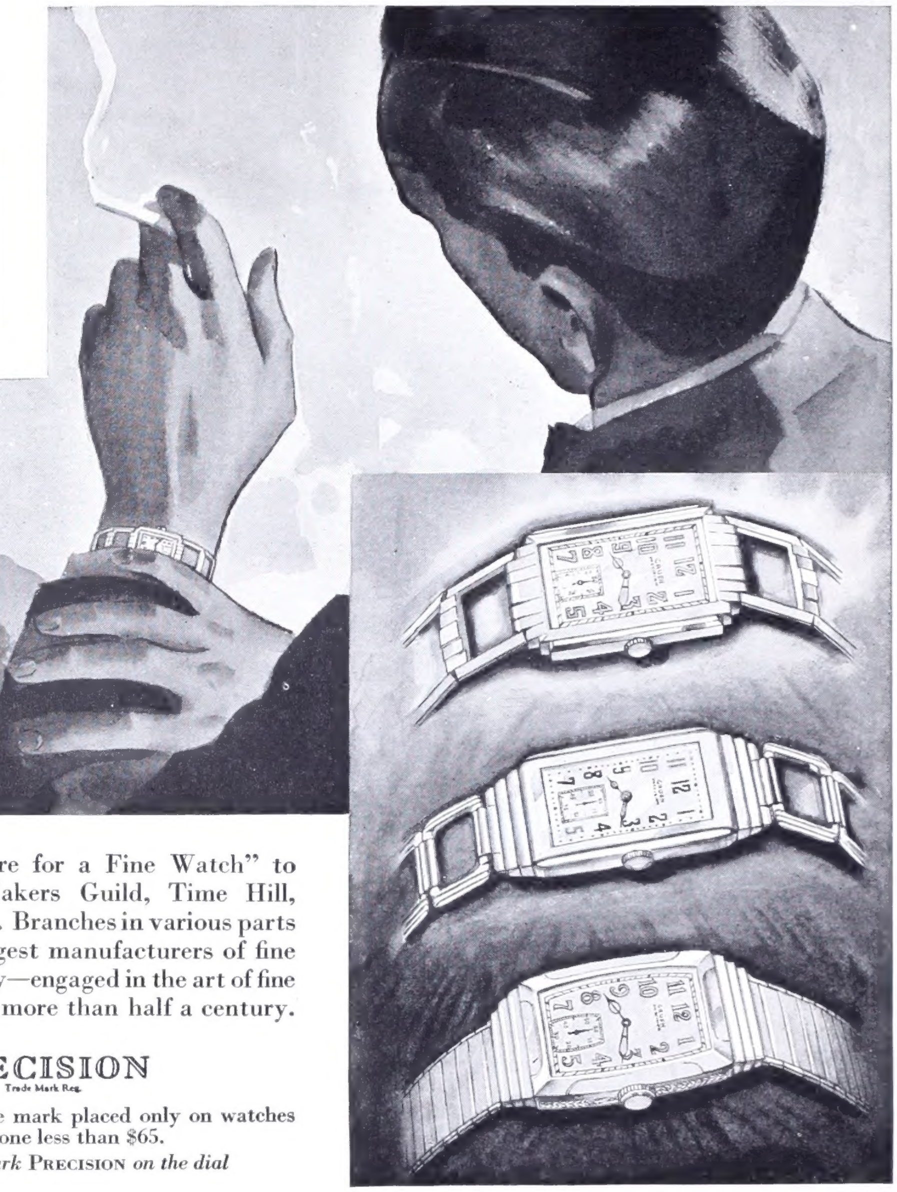


THE OLD WAY

Larger, stronger parts than in any round movement in the same size case. By using all the case space, the Gruen Quadron movement makes possible a new standard of wrist watch accuracy!



THE QUADRON WAY



It is one thing to make a large pocket watch accurate. But a wrist watch—that calls for unusual skill!

The Gruen Guild has always specialized in small movements. They were first to make an accurate thin pocket watch. They introduced the wrist watch to America. The accuracy they have achieved in small movements is uncanny!

Two hundred Gruen Precision Quadrons—exact duplicates of the Quadrons your Gruen jeweler can show you today—were subjected to official observatory tests in Switzerland.

Every one of the two hundred received the Observatory certificate for timekeeping excellence.

Here is the nearest approach to pocket-watch accuracy ever put on the wrist! Made possible by the common-sense Gruen Quadron principle explained above.

The Gruen jeweler nearest you can show you the Gruen Quadron, as well as many other fine Guild creations, priced $37.50 to $3500. In the larger cities, his name is listed in your Classified Telephone Directory under "Gruen Guild Watches."

Write for a copy of the free booklet "How to Select and Care for a Fine Watch" to Gruen Watch Makers Guild, Time Hill, Cincinnati, U.S.A. Branches in various parts of the world. Largest manufacturers of fine watches exclusively—engaged in the art of fine watch-making for more than half a century.

PRECISION
Trade Mark Reg.

Gruen's golden pledge mark placed only on watches of higher accuracy—none less than $65.
Look for the mark PRECISION *on the dial*

Annapolis—*Gruen's newest Quadron, 17 jewel* PRECISION *movement, 14 kt., coin gold-filled case, with adjustable link band carrying out design of watch, $90.*

Dartmouth—*Another new Gruen Quadron, white gold-filled case with adjustable link band carrying out design of watch. 17 jewel* PRECISION *Quadron movement, $85; with leather strap, $75.*

York—*17 jewel* PRECISION *Quadron movement, 14 kt. solid white or green gold case of modern tailored design, flexible Guild band, $107.50.*

GRUEN

Listed in the Classified Telephone Directories of the larger cities under "Gruen Guild Watches" is the name of your nearest Gruen jeweler. His store is marked by this Gruen Service Emblem

GRUEN WATCHES

QUADRON

Fortune, October, 1930

FORTUNE is published monthly by TIME, Inc., at 205 East 42nd Street, New York, N. Y. Entered as second class matter January 7, 1930, at the Post Office at New York, N. Y., under the act of March 3, 1879. Subscription rates: One year in the U. S. and possessions, $10; Canada, $10.50; elsewhere, $11.

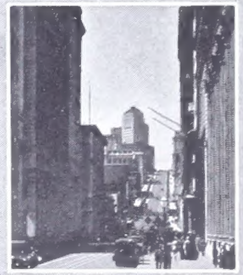
Vol. 2
No. 4

California Leads America in Population Gain!

San Francisco leads the West in business opportunity

Temperature that varies only 6° means all-year outdoor life in the San Francisco Bay region. 59° is the average.

San Francisco Bay is the greatest land-locked harbor in the world. Here the vessels of 146 steamship lines call regularly, and tonnage is valued at more than two billion dollars per year.



California Street. San Francisco's banks and finance institutions rate among the nation's first.

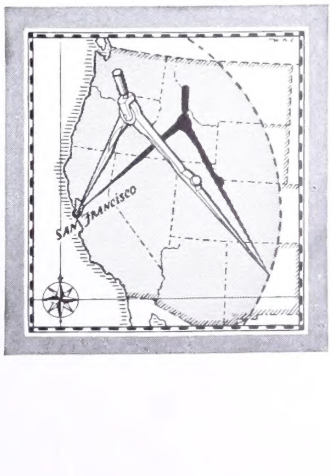
WITH a new population total of 5,672,009 people—a gain over 1920 of 2,245,148 or 65.5 per cent—California shows the greatest population growth in the nation in the last ten years; a growth that was more than four times the nation's average.

Long famous as a state "where life is better," this gain in population was not wholly unexpected. Other factors show the fullness of the development. For instance, in 1920 manufacturing passed agriculture as a source of basic income and the gap between the two has widened ever since. In 1927, the last year for which there are comparable authentic figures, agriculture had a value of $669,325,000, while value added to products by manufacture reached the total of $1,075,400,000.

Increases in property values are a further indication of the sound development:

	Property Value	Property Value Per Capita
1920	$9,110,890,894	$2,658
1929	19,771,806,368	3,486
Increase	117%	31.1%

California offers industry and commerce wealthy, ever growing markets. And San Francisco, in the center of the whole far Western population, offers outstanding opportunity.



Fifty per cent of the total population of the eleven Western states can be served most quickly and cheaply from this city. Another twenty-five per cent can be served on an equal basis with any other city.

Here are headquarters for the leading industrial, commercial, transportation and financial interests of the West.

Here three transcontinental railroads meet the ocean on the edge of a bay where every ship in the world could drop anchor at one time. Highways radiate to all the West.

San Francisco Bay is the traditional gateway to 900,000,000 people who are rapidly developing modern wants in the lands that the Pacific borders. Already San Francisco Bay ranks second only to the port of New York in value of water-borne tonnage.

Manufacturing in the San Francisco Bay area has an annual value of $1,127,926,431—43.5 per cent of the state's total.

With this development has grown a population of 1,600,000 people within one hour's ride of downtown San Francisco. Within the 42 square miles that comprise the city itself, there are today 637,212 people of more than average per capita wealth.

San Francisco offers able men a brilliant opportunity! Here industry and commerce are rising to meet new great demands. Here is a manner of living that brings thousands who come to visit in this all-year outdoor-land, back again to live.

Write Californians Inc., Dept. 2210, 703 Market Street, San Francisco, for two illustrated books to tell you more about this city and the potent region that it centers.

SAN FRANCISCO

IN CALIFORNIA—"WHERE LIFE IS BETTER"

"THE COMMON TONGUE"

☆

"Lingua franca" they called it in those days when the English Language was being born of a Norman father and a Saxon mother. It marked the fusing of two alien civilizations — the meeting ground of dissimilar peoples — for mutual understanding.

Today's business world talks a lingua franca of supply and demand, the meeting of human needs by honestly produced supply, and the telling about it in terms of universal humanity.

The wider the experience of the advertising agency, the more able it should be to talk for its clients the common success language of the world.

THE H·K·McCANN COMPANY

ADVERTISING

NEW YORK CHICAGO CLEVELAND DENVER LOS ANGELES SEATTLE SAN FRANCISCO
MONTREAL TORONTO WINNIPEG VANCOUVER LONDON PARIS FRANKFORT o. M

WORLD'S LARGEST TABLE!

Our Scotch and English craftsmen recently built this enormous table for the directors' room of a great American railroad. More than 30 men can be seated in comfortable armchairs around it and, as far as we know, it is the world's largest table. In fact, it is so much larger than the doorway of the room in which it now stands, that the table had to be built in six separate sections and reassembled inside the directors' room in Philadelphia.

Six different types of understructure were conceived by us and embodied in a special preliminary model, scale 2 inches to the foot, which was submitted by us for the consideration of the architect and the directors.

The table top is of choice walnut. The strips of walnut were all taken from the same tree and have been so cunningly matched that the whole huge table top appears to be a single piece of wood.

By ingenious handling of the scale of moldings, it was possible to keep the table top at the most comfortable height from the floor for a seated man (29") and yet have this normal height dimension seem perfectly in proportion with the gigantic dimensions of length and breadth.

The table is trussed and braced with beams of hard maple, 4" x 6", a cross section so unusually large that the beams had to be specially cured to secure complete dryness at the center. The extremely sturdy construction makes it certain that the immense table top will not warp or depart from its present perfect level.

Are you finding it difficult to secure just the right furniture for your own executive offices? We should be glad to have our experts consult with you or your architects and lay out a scheme of appropriate furniture based on your specific needs.

Erskine-Danforth Corporation, designers and makers of choice furniture: New York, 383 Madison Avenue; Chicago, 620 N. Michigan Avenue; Cleveland, 11129 Euclid Avenue; *Distributors:* Boston, 132 Newbury Street; Los Angeles, 2869 West Seventh Street.

Bruehl

• DANERSK •

DANERSK FURNITURE is sold only at the Danersk Showrooms in

NEW YORK, CHICAGO, CLEVELAND, BOSTON, LOS ANGELES

Off the Record

Reindeer Steak and Fried

THERE are ice plants and abattoirs at Elephant Point on Kotzebue Sound. Where can repose the carcasses of 10,000 reindeer. And in Alaska are 1,000,000 reindeer, some herded, some free, running swiftly through the unrelieved snow and by preference against the wind, sniffing each breeze for lichen and in summer for the blueberries which they love.

It was long known in Siberia but only recently in Alaska that these exquisite, nervous animals could not only draw sleds faster and farther than dogs but could also be eaten. The Alaskan discovery of what was commonplace in Siberia followed the importation into the U. S. territory of a small herd of reindeer by Dr. Sheldon Jackson, then Commissioner of Education. The reindeer multiplied, and Alaska became used to having its snow blankets pierced by sharp fleet hooves. Then there were ice plants and abattoirs at Elephant Point on Kotzebue Sound.

And when the reindeer became food he became the subject of distribution and refrigeration, of tariff laws and inspection by bureaus of sanitation, of publicity and competition. But primarily he became steak. More than anyone else it was Mr. Carl J. Lomen who thought of him as steak. Mr. Lomen first came to Alaska because he had heard that there was no place like Nome for gold. He found little gold, but he founded the Lomen Reindeer Corporation. Now you may find him in New York where he has an office, in Washington explaining reindeer to the Committee on Ways and Means, in Alaska during September and October, which is the mating season, on the Pacific coast to see whether people like reindeer steak, in St. Louis to see to it that people when they ask for reindeer steak are not given venison. Unlike venison, reindeer has no gamey taste. Mr. Lomen describes its flavor as something between breast of mallard duck and lamb. There are many ways of serving it. Mr. Lomen knows them all.

It is this knowledge which he is most anxious to impart to the U. S. Because, to Mr. Lomen's constant perplexity, people do not readily think of reindeer when they walk into a restaurant. For one thing the reindeer comes from so far although it should be common knowledge that proper refrigeration in no wise impairs the flavor or quality of meat. (Still many people prefer to eat a chicken that has been killed *in loco* than one which was killed a week ago, iced, and shipped a few thousand miles. The Ice Age cannot be accepted without protest.) And for another thing people do not often ask for unfamiliar foods (and corned beef hash will always be more popular than snails *Bourguignonne*).

Reindeer, however, is not so expensive as to be only the dish of an epicure. Its price is approximately that of venison and, as Mr. Lomen would point out, if more people would *only* eat it the price would fall. Mr. Lomen does everything he can. He persuaded New York's Mayor James J. Walker to proclaim a reindeer week. He wrote to Oscar of the Waldorf and received an answer praising the meat. He wrote to Alfred W. McCann and received an answer saying the meat was free from diseases and invigorating. He distributes pamphlets to restaurants and hotels and gives interviews whenever he can think of one.

Underwood & Underwood

CARL J. LOMEN

His efforts have not been altogether in vain. In New York the Central Park Casino serves reindeer chops, steaks, and ragouts, but reports little demand for them. New York's Princeton Club and Players Club say their members like it. The Grosvenor Hotel and the St. Regis serve it, but Sherry's and the Marguery have thus far eschewed it. Occasionally Childs has served it, and this might be important, but the patrons of the restaurant rarely ask for it.

If Mr. Lomen's favorite meat is ever to be popular, it will become so slowly. It cannot find an instant (if not prolonged) popularity as did, for instance, Eskimo Pies. It is not as cheap as grapefruit and by its very nature cannot be easily accepted into familiarity. Yet there seems no reason why many a tavern and many a chop house should not some day ring with orders for "reindeer steak and fried." And Mr. Lomen, very happy indeed, would add: "And a little apple sauce, please."

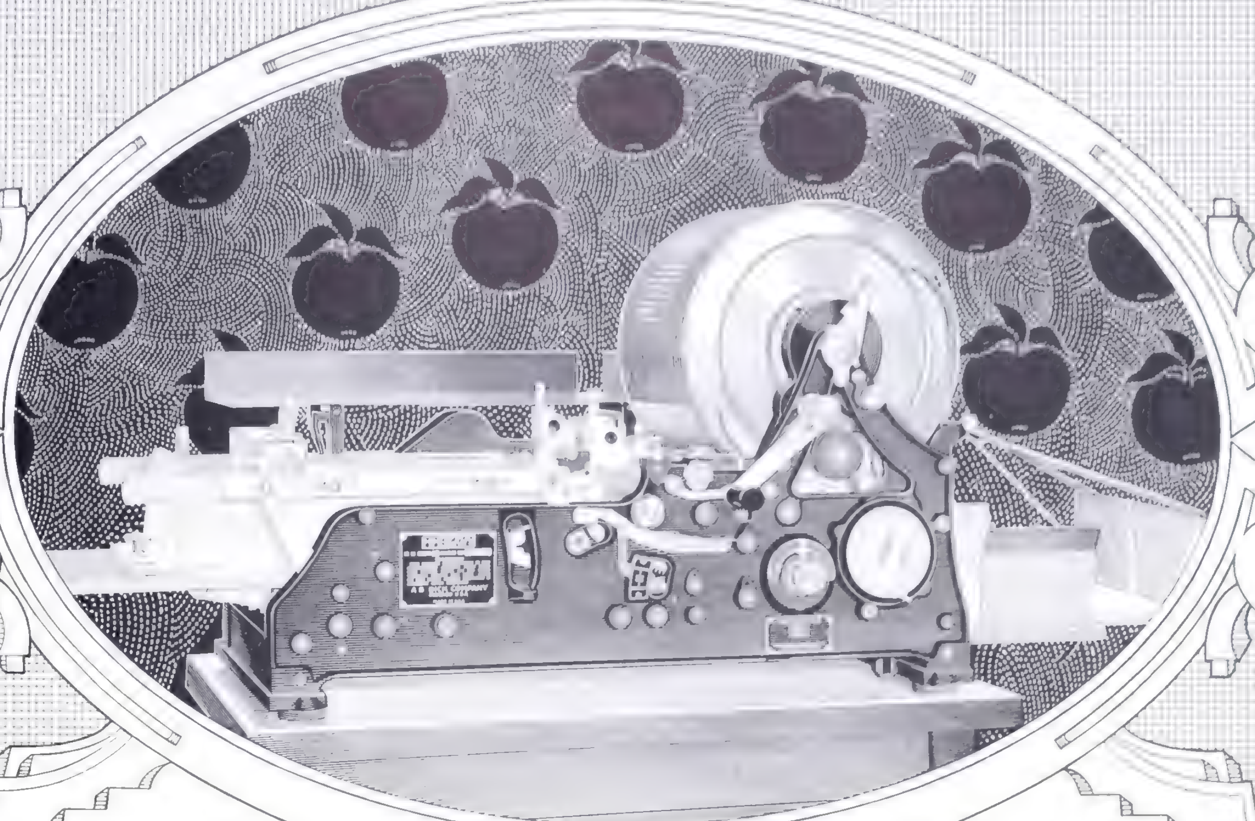
Transcript's Hundredth

AS TYPICAL, as staid, as venerable as a brownstone house on Beacon Street is the Boston *Transcript*, which this year with dignity celebrates its centenary. It is an aristocrat among newspapers and important because in the communities where it circulates aristocrats are important. It is still sufficiently of the old school to continue to print display advertisements on its first page. (The upper left-hand corner is usually reserved for Jay's, the women's wear store on Temple Place.) And it did not admit illustrations until a few years before the War, and none have yet appeared on page one. But it takes its fling at modernity with *Transcript* Sports, which places particular emphasis on horses and yachts (a hobby of Mr. George E. Stephenson, *Transcript* shareholder), and is widely acknowledged as the best section of its kind in Boston newspaperdom.

Publisher of the *Transcript* is George S. Mandell, former intercollegiate hurdle champion, owner of large stables at his estate in Hamilton, Massachusetts. No one outside the family knows how many horses he owns. He is reputed to own more old, broken-down nags than any other fancier of horses. Keen, dynamic, opinionated, aphoristic, Mandell keeps physically in the background of *Transcript* activities. His office is a typical *Transcript* cubby-hole. Smaller than H. T. Parker's (drama) or Edwin Francis Edgett's (books), it measures only ten feet by six and is around the corner from the more mahoganied sanctum of Henry T. Claus, since February, 1925, *Transcript* editor-in-chief. In reply to a protest made by another member of the *Transcript* corporation who thought and said that the publisher should have the biggest office of all, he said, "Oh no. The editor has to meet people. He needs the facilities. I don't."

In adherence to tradition the *Transcript* has been notable. Like the families on Beacon Street, the *Transcript* is dynastic. Founded in July, 1830, by Henry W. Dutton and James Wentworth on the suggestion of Lynde M. Walter, *Transcript* ownership passed upon the deaths of Walter in 1842 and Wentworth in 1847 into the hands of the third partner, remains today wholly owned by his descendants. He had one son, Henry, who died on March 1, 1875. Henry Sr. died six weeks later, leaving the *Transcript* to his four daughters and the widow of his son. The Mandells, Eustises, and Stephensons who now share in the ownership are descendants of these five. (Other Mandells are the widow and children of William P., older brother of George S. The Eustises are five, Mary and Elizabeth, spinsters of Brookline; Tracy, who is vice president of the corporation and who consistently seconds the report of the publisher at the annual meeting; Henry D., who for fifty years has been listed as an employee of the press

[*Continued on page 20*]



BY ITS FRUIT

More completely automatic than any of its famous predecessors, this newest model Mimeograph is a truly remarkable achievement. But *what it does* is even more remarkable. Not the device itself, *but its product,* is what counts. By its fruit you will know it. Through hour after hour of the working day it duplicates in rapidest thousands all things written, typewritten or drawn in line. It has no peer for speed and fineness of work. It sets a new high mark in mechanical duplication. Letters, questionnaires, charts, graphs, drawings, etc., it produces in limitless quantities. Yet anyone can operate it, because control is ultra-simple. Stand and machine are now a single unit, and the benefits are many. The feeder takes a full ream of Mimeograph paper. Here's volume reproduction, privately done, at little cost. Manifold are its means of time and money saving. Get full particulars from A. B. Dick Company, Chicago, or from branch office in any principal city.

MIMEOGRAPH

EDISON-DICK
MIMEOGRAPH
CHICAGO

YOUR ORCHESTRA playing just to please YOU

. . . a charming Victor Herbert waltz . . . an overture with dash and life . . . some lovely Schubert song you like . . . a swift new fox trot . . .

In the Wurlitzer Residence Pipe Organ, the many voices of the complete symphony orchestra and the dance orchestra are united with the vibrant tonal splendor of the great pipe organ.

You have merely to touch a button . . . and your concert begins . . . as if famous organists were there in your home, playing only for you . . . every melody you love . . . with all the blended beauty of many perfect instruments . . . again and still again . . .

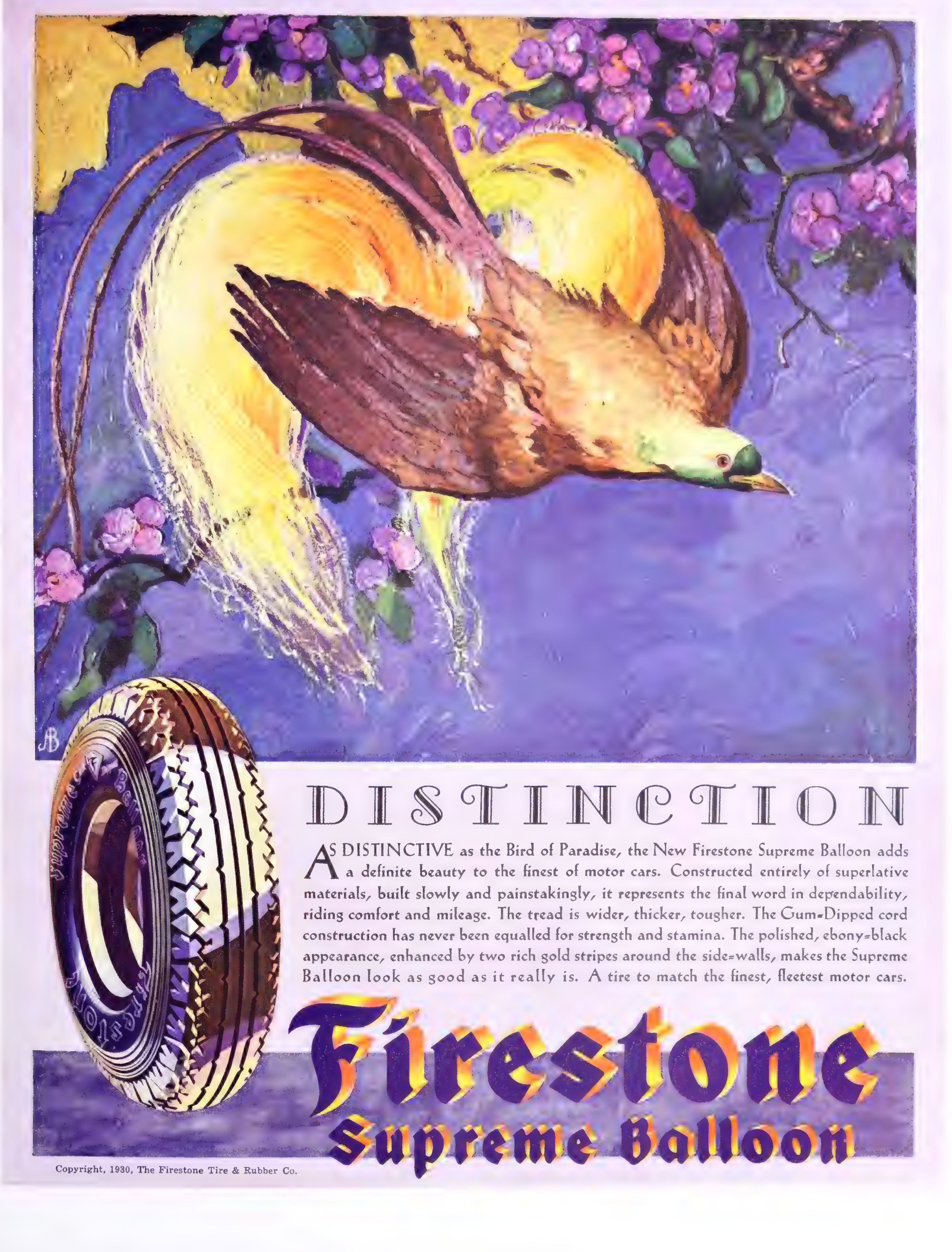
The console of the Wurlitzer Residence Organ is not as large as a grand piano . . . the price of this distinguished instrument has never before been equalled . . . the charm of its presence adds new richness to your home.

Hear this pipe organ, and play it yourself, at your nearest Wurlitzer Studio . . . New York, Buffalo, Chicago, Detroit, Cincinnati, Cleveland, Los Angeles, or Pittsburgh.

A beautiful brochure, with photographs of installations, may be obtained from any Wurlitzer store.

WURLITZER
Reproducing
Residence Pipe Organ

The price — $6500 and upward



DISTINCTION

AS DISTINCTIVE as the Bird of Paradise, the New Firestone Supreme Balloon adds a definite beauty to the finest of motor cars. Constructed entirely of superlative materials, built slowly and painstakingly, it represents the final word in dependability, riding comfort and mileage. The tread is wider, thicker, tougher. The Gum-Dipped cord construction has never been equalled for strength and stamina. The polished, ebony-black appearance, enhanced by two rich gold stripes around the side-walls, makes the Supreme Balloon look as good as it really is. A tire to match the finest, fleetest motor cars.

Firestone
Supreme Balloon

Copyright, 1930, The Firestone Tire & Rubber Co.

DOUGLAS DONALD

The Thrill of Winged Flight

whether in aeroplane or modern runabout, which is virtually a water plane, is similar in both.

A 200 horsepower Sterling Petrel engine drives this Sea-Lyon runabout at over 40 miles per hour. That the thrill may be prolonged, continued on indefinitely, as you will, this Petrel is built 16% larger (779 cubic inches) and with greater power at useable revolutions — 2000 R.P.M.

(Any comparable engine, of 678 cubic inch piston displacement, must turn 300 to 500 revolutions faster, with tremendously increased effort, to equal the Petrel.)

The Sterling Petrel's fuel consumption is satisfactorily less per mile. . . . . . It is safely carbureted.

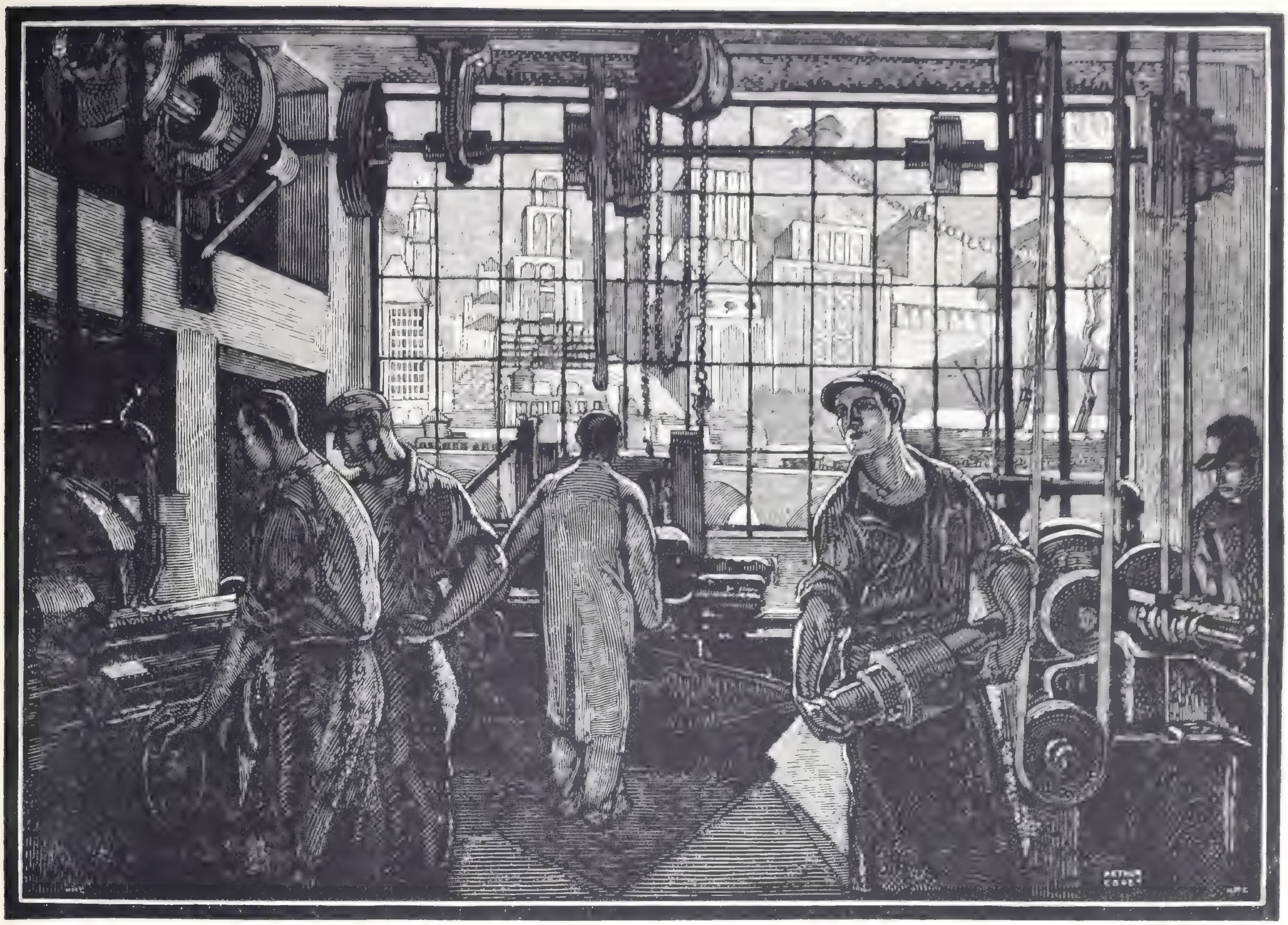
STERLING ENGINE COMPANY

1270 Niagara Street Buffalo, N.Y., U.S.A.

12 to 565 H.P.

W. H. Moreton Corp., 1043 Commonwealth Ave.,
distributors, Boston

Bruns, Kimball & Co., 5th Ave. at 15th St.,
distributors, New York



Wood block engraving by Howard McCormick from mural by Arthur Covey.

GREAT MANUFACTORIES, towering skyscrapers, moving trains and motors, mighty ships — achievements of man that typify the work of the grinding wheel.

Yesterday, the mechanic with steel against steel slowly and laboriously milled his stock.

Today, grinding wheels and grinding machines made by Norton Company, Worcester, Mass., fashion even the hardest steel alloys to mechanical perfection on a mass production basis.

NORTON — Grinding Wheels . . Abrasives for Polishing . Pulpstones . . . Floor and Stair Tile
Grinding and Lapping Machines . Refractories . . Porous Plates . Abrasive Aggregate

The New York Trust Company

Capital, Surplus and Undivided
Profits $47,000,000

DOMESTIC
and
FOREIGN BANKING
FACILITIES

CORPORATE
and
PERSONAL TRUSTS

100 BROADWAY

40TH STREET AND MADISON AVENUE
57TH STREET AND FIFTH AVENUE

$82,000 Decrease in Advertising

MAKING POSSIBLE THE EMPLOYMENT OF 18 ADDITIONAL SALESMEN

Led to a 252% Sales Increase

THIS is the account of an experience that drove home the need of a fee system in advertising and merchandising work. It deals with an important specialty sold to men.

The special problem calling for a new plan arose from a demand on the part of the Board of Directors for a large and immediate increase in volume. A complex set of conditions made that imperative. Advertising and sales cost was secondary to mass production.

Within a few days after the Board had voted $300.000 for advertising—double the previous maximum—the president of the company selected a new group of advertising and marketing consultants to work with him. His former agency had specialized in "atmosphere" and suggestive copy. His new agency favored the use of strong selling copy with a direct personal appeal to the prospect.

A factor in his selection was his acquaintance with an individual in the agency who had taken a deep interest in proper "balancing" of marketing efforts and had demonstrated in several successes a flair for that type of planning.

The first step initiated by this man was an examination of sales records. How many classes of dealers and wholesalers? What breakdown by geographical units? By size and rating of stores? By size-groups of cities and towns?

Just how close to par was this company in each sector and subdivision of its market? Where were the salesmen spending their time? Just what were they accomplishing against par? Were calls too infrequent? Or too frequent and too costly? What would be an "ideal" sales plan under the existing conditions? How many and which stores should be sold direct—when and how?

A survey covering these and other questions resulted in two tables: an evaluation of the market and its logical units, using five basic factors to show total consumption in each area; a sales set-up calling for thirty men, eighteen to be added at once.

Before the president had finished reading the report he said, "This seems unreasonable. We allow $300,000 for advertising and give you the business without effort on your part. Then before you make a move on the advertising, you ask us for some $80.000 additional for 18 new men. That is not what we expected of you!"

It was suggested that he note the budget in the summary. There he found the advertising had been cut to $218,000 and the money for the new men obtained without increasing the total.

The details of this plan are another story. By September volume had doubled the best previous year. He then allowed an additional $100,000 for advertising—on his own initiative—and ended the year with an increase of 252%.

THE man who directed that operation is today a partner in Cowan & Dengler. That job left an impression not to be forgotten—the conviction that in due time executives would sense the value of unbiased service.

Under the Cowan & Dengler Fee System, a complete separation is made between the client's appropriation and the Retainer or profit. The client may spend more or less without affecting the Retainer.

The client may divert part of his budget to the employment of additional men or to use of non-commissionable advertising without affecting our profit.

When general business shows a downward trend as in the Spring of 1930, the client may expect us to propose a proper reduction in his expenditures and the setting up of a reserve to be used when he can cash in at a higher rate of return.

In short, we have attempted to provide an unbiased service and to correct the disadvantages inherent in the common agency-client arrangement.

This plan is not designed to "save the advertiser money," in the narrow sense. Often the first cost is more. But measured by advertising cost per dollar of sale it often produces a saving. In some cases, a substantial saving or a large increase in profit.

COWAN & DENGLER

ADVERTISING • MERCHANDISING • SALES COUNSEL

NEW YORK

The New York Trust Company

Capital, Surplus and Undivided
Profits $47,000,000

DOMESTIC
and
FOREIGN BANKING
FACILITIES

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The first step initiated by this man was an examination of sales records. How many classes of dealers and wholesalers? What breakdown by geographical units? By size and rating of stores? By size-groups of cities and towns?

Just how close to par was this company in each sector and subdivision of its market? Where were the salesmen spending their time? Just what were they accomplishing against par? Were calls too infrequent? Or too frequent and too costly? What would be an "ideal" sales plan under the existing conditions? How many and which stores should be sold direct—when and how?

A survey covering these and other questions resulted in two tables: an evaluation of the market and its logical units, using five basic factors to show total consumption in each area; a sales set-up calling for thirty men, eighteen to be added at once.

Before the president had finished reading the report he said, "This seems unreasonable. We allow $300,000 for advertising and give you the business without effort on your part. Then before you make a move on the advertising, you ask us for some $80,000 additional for 18 new men. That is not what we expected of you!"

It was suggested that he note the budget in the summary. There he found the advertising had been cut to $218,000 and the money for the new men obtained without increasing the total.

The details of this plan are another story. By September volume had doubled the best previous year. He then allowed an additional $100,000 for advertising—on his own initiative—and ended the year with an increase of 252%.

THE man who directed that operation is today a partner in Cowan & Dengler. That job left an impression not to be forgotten—the conviction that in due time executives would sense the value of unbiased service.

Under the Cowan & Dengler Fee System a complete separation is made between the client's appropriation and the Retainer or profit. The client may spend more or less without affecting the Retainer.

The client may divert part of his budget to the employment of additional men or to use of non-commissionable advertising without affecting our profit.

When general business shows a downward trend as in the Spring of 1930, the client may expect us to propose a proper reduction in his expenditures and the setting up of a reserve to be used when he can cash in at a higher rate of return.

In short, we have attempted to provide an unbiased service and to correct the disadvantages inherent in the common agency-client arrangement.

This plan is not designed to "save the advertiser money," in the narrow sense. Often the first cost is more. But measured by advertising cost per dollar of sale it often produces a saving. In some cases, a substantial saving or a large increase in profit.

COWAN & DENGLER

ADVERTISING • MERCHANDISING • SALES COUNSEL

NEW YORK

IF YOU WANT BETTER LIVING CONDITIONS

© G. T. Co.

CLEVELAND offers health, recreation, culture and education for the families of the business man and his employes. In the center of the "maximum energy belt" of the United States, it not only has a low death rate—10.2 per thousand as compared with a 1928 average of 13 for 66 large cities—but also minimizes economic waste due to illness and sets a high standard of vital, purposeful living.

¶Cleveland's recreational system includes 11,000 acres of parks, in a 90 mile system that surrounds Greater Cleveland and includes boulevards, camp grounds, bathing beaches and golf courses.

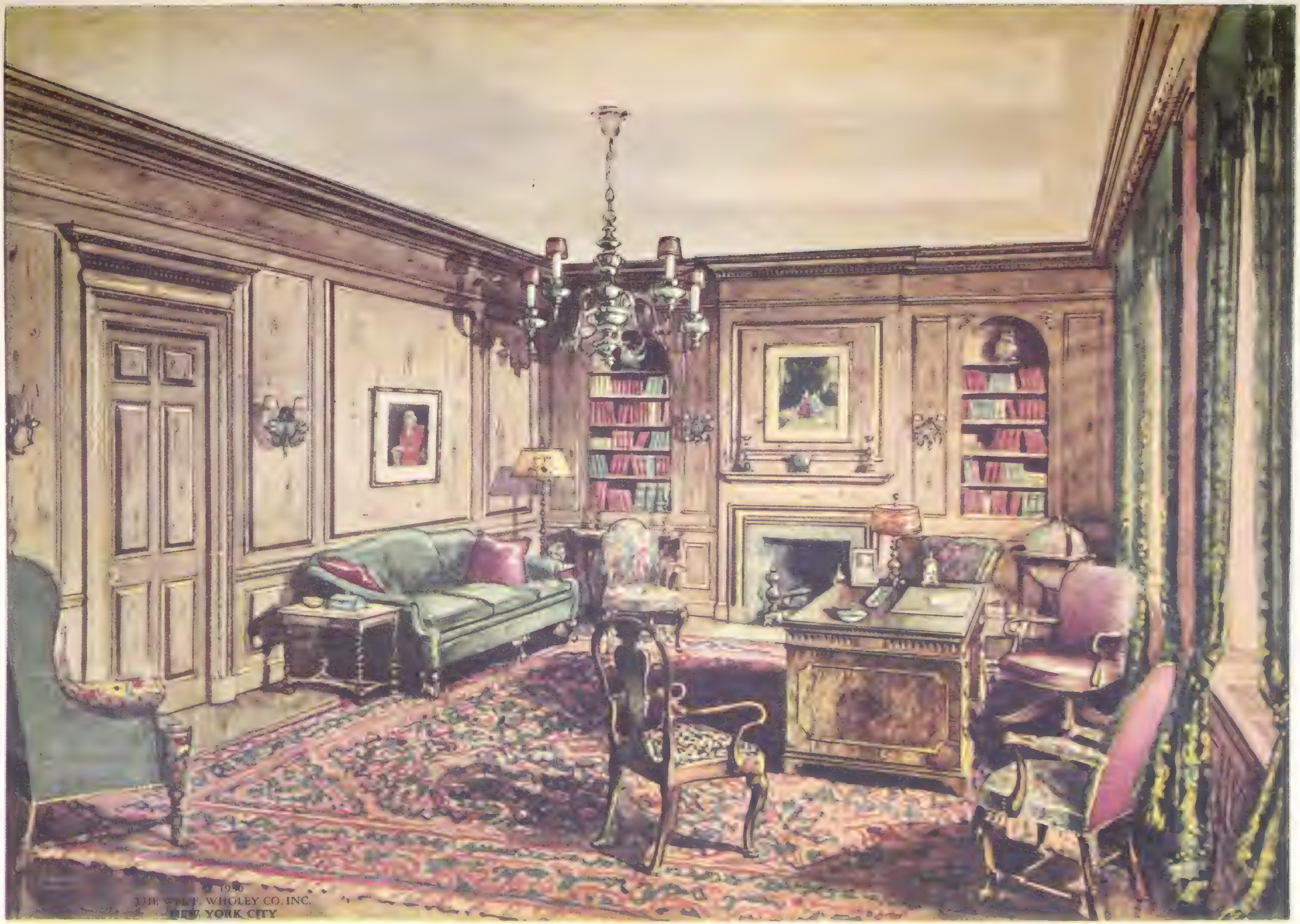
¶Cleveland's facilities for education and culture include one of the nation's leading symphony orchestras, three excellent museums, a comprehensive library system, three colleges and three universities. Its public school standards are unusually high. Its living costs are low; and in its extensive suburbs, homes are found in a wide range of choice.

¶Good living conditions comprise one of the ten main factors in selecting a strategic location for a business. For specific data regarding any or all of these factors, write this Bank.

GUARDIAN TRUST COMPANY

CLEVELAND, OHIO

RESOURCES MORE THAN $165,000,000


1930
THE WM. F. WHOLEY CO. INC.
NEW YORK CITY

An inviting, livable office used to be the exception. Today, such an office has become the rule, for the executive and professional man.

Many who have felt this trend of the times are wondering how their present, conventional offices could be transformed, or how their newly leased quarters should be decorated and furnished. To such men, our staff offers definite assistance.

This organization plans office layouts, designs the interiors, executes the decorations and provides the furniture; coordinating every detail to assure a harmonious result.

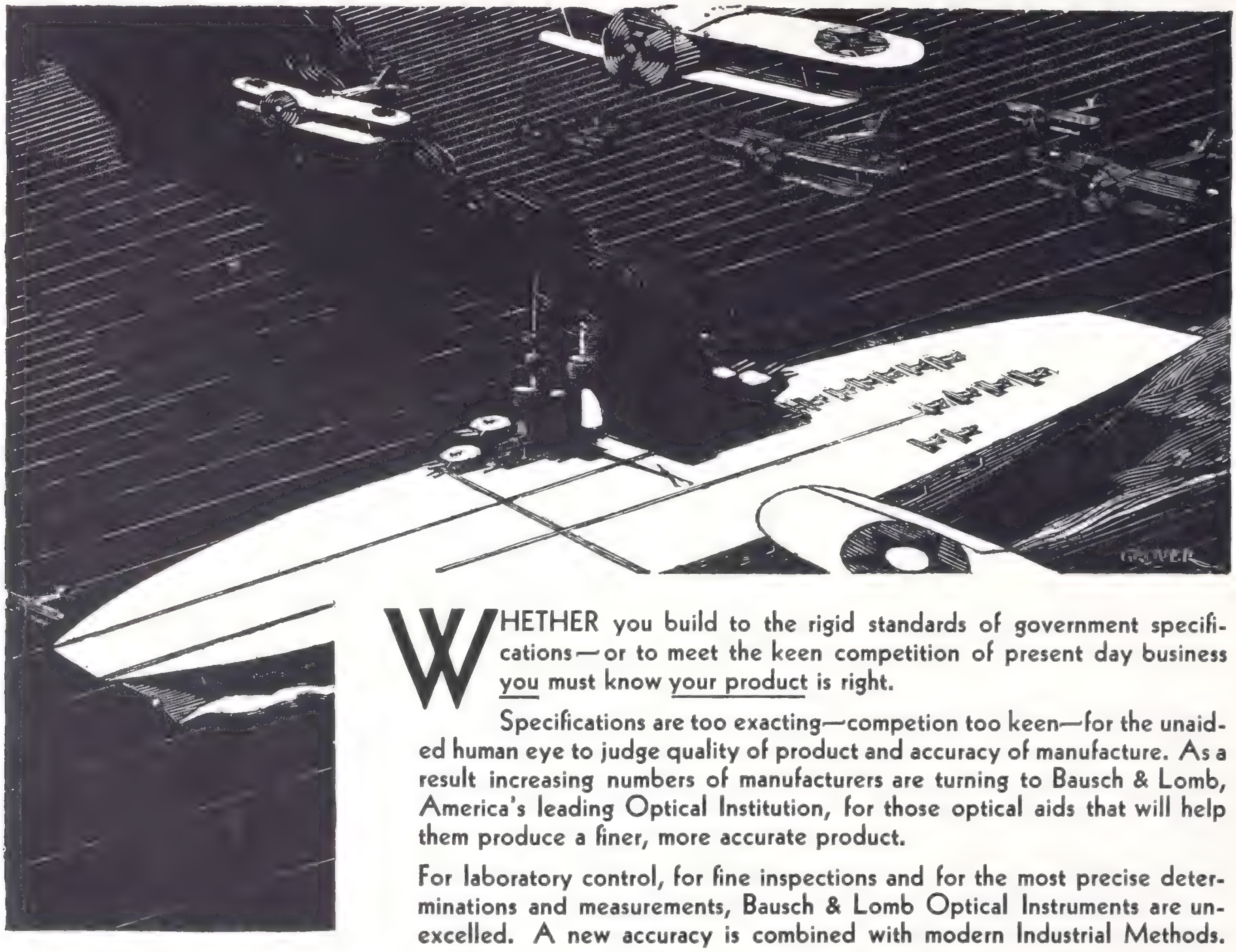
~ *Designs and suggestions will be furnished, without obligation, to interested executives* ~

The William F. Wholey Co. Inc. ⟨*Equipment Specialists*⟩ 11 East 36 St. New York

- - - - when building to

RIGID SPECIFICATIONS

your product Must be Right



WHETHER you build to the rigid standards of government specifications—or to meet the keen competition of present day business you must know your product is right.

Specifications are too exacting—competion too keen—for the unaided human eye to judge quality of product and accuracy of manufacture. As a result increasing numbers of manufacturers are turning to Bausch & Lomb, America's leading Optical Institution, for those optical aids that will help them produce a finer, more accurate product.

For laboratory control, for fine inspections and for the most precise determinations and measurements, Bausch & Lomb Optical Instruments are unexcelled. A new accuracy is combined with modern Industrial Methods.

Let our long experience and wide knowledge of precision methods help you maintain your guarded reputation.

Manufacturers of
Optical Precision Control
Instruments
▼
Also of
ORTHOGON
Eyeglass Lenses for Better Vision

BAUSCH & LOMB OPTICAL CO.
641 St. Paul Street « » Rochester, New York
New York » Boston » Chicago » San Francisco
Los Angeles » Frankfurt a/M » London

BAUSCH & LOMB

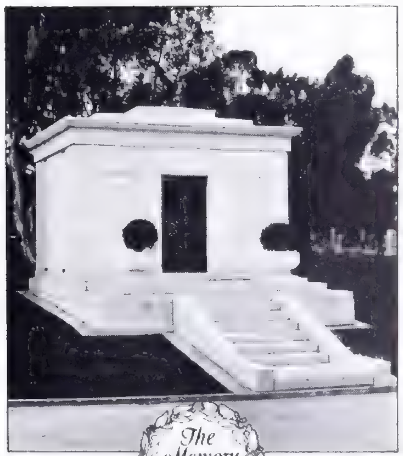
VERMONT MARBLE

has *the* STRENGTH *of the* EVERLASTING HILLS

THE illustrations on this page give evidence of the high regard in which the beauty and the permanence of Vermont Marble are held by American architects. Above is the facade of the recently completed Olin Memorial Library, Wesleyan University, at Middletown, Connecticut. It was designed by the architectural firm of McKim, Mead & White. At the left is an example of modern memorial architecture which stands against the charm and loveliness of a typical Californian background. And below is an unusual view of America's greatest shrine, the Arlington Memorial Amphitheatre on the Potomac, designed by Carrere & Hastings, and dedicated forever to the memory of the heroic dead who gave their lives in the service of their country.

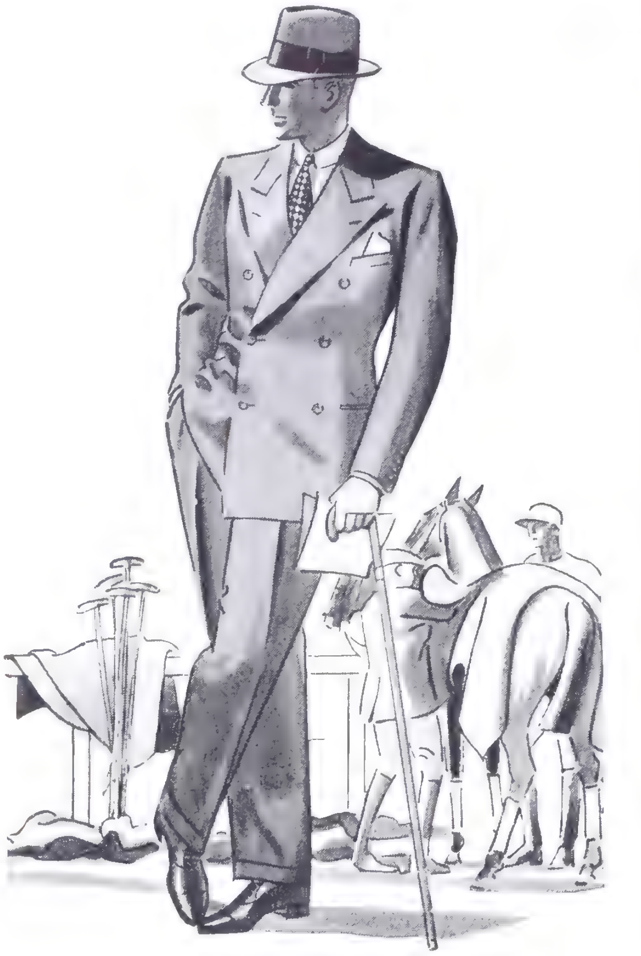
Vermont Marble is appropriately and effectively used today not only in public buildings, community memorials, and educational institutions, but also in increasing measure in homes and gardens — bringing to these the charm and serenity which characterize the notable estates of the old world.

Write for the free booklet, "All That is Beautiful Shall Abide Forever" . . . It gives helpful information on the problem of selecting appropriate memorial designs. Our Department of Plan and Design will gladly co-operate with a Master Craftsman in Marble in your vicinity, without obligation, in submitting sketches and estimates for cemetery memorials . . . Address: Dept. F 304, Vermont Marble Company *(the world's largest quarriers of marble)*, Proctor, Vt.



The Memory Stone

IN ***addition to the distinctive beauty of Vermont Marble . . . is its resistance to the wearing effects of climatic conditions. Of these, the most destructive during the course of centuries is moisture. Bulletins of the governmental Bureau of Standards show that Vermont Marble absorbs only about one-third as much water as the average of other memorial stones. Vermont Marble is imperishable and is everlasting.***



Gentlemen's Clothes

OF CHARACTER

FOR SPORTSMEN & UNIVERSITY MEN

Style developments in gentlemen's clothes, for which the house of Tripler has gained the preference of sportsmen and university men, are expressed in our presentation for fall wear, tailored from woolens representing the world's finest makers

OUR CLOTHES ARE TAILORED FOR US BY HICKEY-FREEMAN

F.R. TRIPLER & CO.

Outfitters to Gentlemen · *Established 1886*

MADISON AVENUE AT 46 STREET

New York

Off the Record—*Continued*

department, comes to work daily in a limousine, dons overalls and bales waste paper in the pressroom; and Mrs. Martha Eustis Stephenson of Philadelphia. George E. Stephenson, her son, is assistant treasurer.) George S. Mandell and Tracy Eustis, grandsons of Henry W. Dutton, together with great-grandsons Thomas P. Mandell and Stephenson, are active, the others passive in the management.

The *Transcript* is one of the few remaining institutions in the Fourth Estate. Its circulation is smaller than that of some other Boston newspapers, but in dignity and importance it admits no equal. Boston is full of *Transcript* stories that reveal in exaggeration the peculiar position which it occupies in Boston life. Among these is one which tells of the arrival at a Beacon Street mansion of representatives of five Boston dailies who had come for information concerning the last hours of the life of a prominent Bostonian. They were admitted to the reception hall by a butler who immediately excused himself and went to the foot of the stairs whence he called to the great man's widow upstairs, "There are four reporters down here, madam, and a gentleman from the *Transcript.*"

Latest additions to the store of *Transcript* anecdotes came from the festivities attending the centenary celebration. A special issue, for the *Transcript* staff birthday dinner, contained tributes to loyal *Transcript* employees. Robert Lincoln O'Brien, publisher of the rival *Traveler* and one-time *Transcript* editor (1906-10) contributed a fulsome and reminiscent article about Mandell himself which was thus laconically declined by telegram:

SORRY CANNOT USE BECAUSE OF OUR POLICY NOT TO PRINT MISLEADING ADVERTISING

Proud of its tradition, the *Transcript* has entered its second century with reiteration of its policy to "print sensation because it is news and not news because it is sensation," and in typical *Transcript* prose thus characterizes its present and prophesies its future:

"Quick to sense new currents in life and thought, the *Transcript* marches in the van of progress without sacrifice of dignity or self-respect. To the flapper, male or female, it makes no appeal. To men and women in all walks of life who are earnest in their work, clean in their play, and thoughtful in the hours between, it is, as of old, counsellor and friend. It differentiates solids from froth, the permanent from the passing, substance from shadow. In a yeasty newspaper generation plagued by real and imitation yellow journalism, it affords abundant proof that enterprise and serious purpose may go hand in hand to ever new prosperity and success."

$3.00 Up

L. SHERMAN ADAMS, one of Boston's best-known brokers, has cultivated a most profitable habit. Almost every week he drops in at the security auctions held in the rooms of the Boston Real Estate Exchange. He quietly smokes a cigarette as one lot after another of apparently worthless securities is put up for sale. A nod of his head registers his bid. One day in 1927 such a nod made him owner of 1,000 shares of Wire Wheel Corp. at $3.00 for the lot. Shortly after, the company was reorganized, and his $3.00 worth of stock was worth just over $116,500. The auction sales which Mr. Adams so profitably attends are a weekly feature in Boston's financial life. The securities to be offered are announced in the newspapers, and such bankers, brokers, and others as are interested drop in to see what they can pick up. Bids of $1.00 are by no means unknown, and often there is no bid at all. The sales are especially heavy toward the end of the year when investors are getting rid of their lame ducks in order to charge them off as losses on their income tax returns. Mr. Adams is a shrewd trader. Other brokers were aghast when he took on large blocks of Eastern Massachusetts Street Railway, became in fact its largest stockholder, at a time when that company was thought to be one step ahead of the sheriff. And they were also somewhat aghast when Mr. Adams made a considerable amount of money out of the transaction.

DO YOU WORK IN *THIS* KIND OF LIGHT . . . *OR THIS?*

*MAZDA
the mark of a research service

GOOD LIGHT will help your employees to do their work speedily and accurately. If people in your establishment are slow in getting their work done, or if they make many mistakes, poor light may be to blame.

Edison MAZDA* Lamps are made of the finest materials obtainable and with an accuracy that assures *full value of the current consumed.* They bring you the benefit of fifty years of progress in electric lighting.

Examine the lighting conditions under which your employees do their work, then write to the Engineering Dept., Edison Lamp Works of General Electric Company, Nela Park, Cleveland, O., and we shall be glad to send you free bulletins concerning proper illumination in your particular kind of business.

EDISON MAZDA LAMPS
GENERAL ELECTRIC

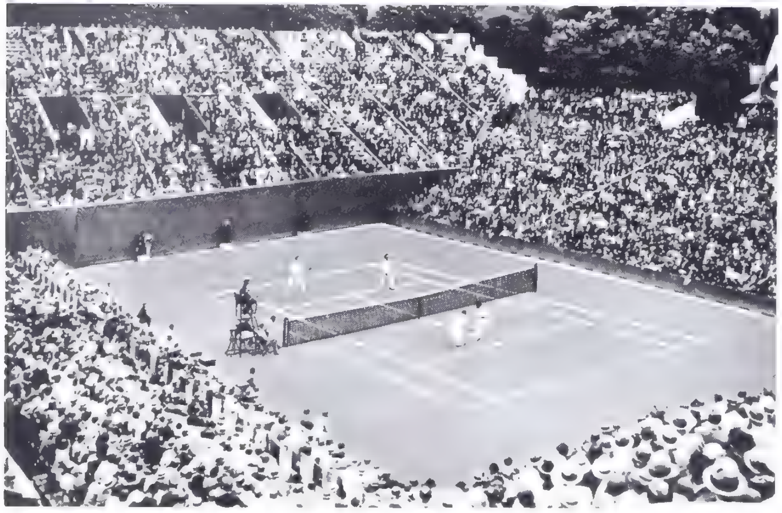
PLAY TENNIS

30 minutes after rain . . . at twilight

. . . weeks earlier . . . weeks later

En-Tout-Cas

FAST DRYING TENNIS COURTS



John Van Ryn and Wilmer Allison vs Henri Cochet and Jacques Brugnon in the 1930 Davis Cup Matches on "En-Tout-Cas Bouhana" courts at the Stade Roland Garros, Paris, France.

CHOICE OF CHAMPIONS

"En-Tout-Cas" courts are the original fast drying tennis courts. Since 1912 thousands of these courts have been in use in England, on the Continent and the United States. The imported surfacing material of patented processed clay is laid over a resilient and quick draining foundation, which gives extraordinary advantages.

A Few "En-Tout-Cas" Successes

The Davis Cup
(Finals or Challenge Round)
1929-30-31 on "En-Tout-Cas Bouhana" Courts at the Stade Roland Garros, Paris.

The French Championships
1929-30-31-32 on "En-Tout-Cas Bouhana" Courts at the Stade Roland Garros, Paris.

The Davis Cup Matches
1928-29 on "En-Tout-Cas Bouhana" Courts at the Rot-Weiss Club, Berlin.

The British Hard Court Championships
1930-31-32-33-34 on "En-Tout-Cas" Courts, West Hants Club, Bournemouth.

The Davis Cup Matches
1930 on "En-Tout-Cas" Court, Chevy Chase Club, Chevy Chase, Md.

Canadian Indoor Tennis Championships
1929 on "En-Tout-Cas" Courts at the Montreal Indoor Tennis Club.

Ideal for Indoor and South

The perfect playing surface of "En-Tout-Cas" and "En-Tout-Cas Bouhana" is similar to turf and ideal for indoor courts, as a great many prominent owners will tell you. Wonderful for the South no glare no dust—no long waiting after a heavy shower and the dull red or green color harmonizes with the landscape plan.

Illustrated Booklet R sent on request

Sole American Agents

H. A. ROBINSON & CO., Inc.

400 MADISON AVENUE NEW YORK, N. Y.

Pacific Coast Representative
Robert Hunter, Jr., 1530 Latham Square Building, Oakland, California
Canadian Agent—E. A. Purkis Ltd., 53 Yonge Street, Toronto

Sole Makers and Patentees
THE EN-TOUT CAS CO., (SYSTON), Ltd., England
Patented in Great Britain, U. S. A., Canada

Off the Record—*Continued*

A Letter

To the Editor of FORTUNE

Dear Sir:

In accepting your invitation to set forth the basis of our adverse criticism of your article entitled "Cloak and Suit," published in your June issue, we . . . shall not enumerate such misleading matter as the photograph of a negro girl presser although these are unknown in the coat and suit industry and comprise less than 5 per cent in the dress trade, nor shall we make mention of your wholly exaggerated comment that ". . . every garment man goes eventually into real estate." Your subheading refers to our industry as one "without leadership and without stability."

That our industry has witnessed a number of successful experiments in coöperation between workers and employers was entirely overlooked in your article, which was quite specific as to strikes and violence . . . In discussing the settlement of the strike of last year, you did not report the establishing of a Commission . . . to make certain that wholesome standards of employment are maintained. You said nothing whatever of the great philanthropies of the employers. . . . You omitted also allusion to the Central Needle Trades School in which many of our manufacturers take an active interest . . . The influx of numerous young and well educated Americans into our industry in the past several years received no notice whatever. You named pinochle as a chief outside interest of the members of our trade but you left unsaid the membership of so many manufacturers on the boards of trustees of hospitals, orphan asylums and other charitable institutions . . .

As far as the statistics in your story are concerned, they . . . cover, in some cases, the men's as well as the women's clothing industries. There are many obvious incongruities. For example, it is said that 153,743 workers produced in 1909, a product valued at $384,000,000. Last year, it is stated, the number of workers had increased by only a thousand — 154,459 — but the value of their product had gone up to a billion and a half. Similarly, in another part of the article, it is said that 94,000 workers in New York account for $1,439,213,761 worth of the industry's $2,573,900,000 total. Brooklyn's workers — 17,380 — add something over $50,000,000 to this figure. Obviously, however, if seventeen odd thousand workers in Brooklyn account for a product worth only $58,000,000, 94,000 workers in New York cannot account for a product worth one and one half billions . . . Your writer estimates, also, that about 60 per cent of the country's production of women's cloaks and suits are made in New York. The percentage is closer to 75. . . . In 1914, 73.83 per cent of the national production was in New York City; in 1921, it was 78 per cent. . . [Mr. Klein states that the FORTUNE writer apparently did not use the report of the Governor's commission.]

The same criticism can be brought to bear on your estimate of average wages. I do not know what you mean by the statement that garment workers average $24.51 per week . . . The report of the Governor's advisory commission showed that in 1924 the average annual earnings of cloak and suit workers in inside shops was $2,016. In 1925 they fell to $1,874. In the sub-manufacturing shops, workers in 1924 had average annual incomes of $1,675, but in 1925, only $1,375. The special computation made for the shops belonging to the Industrial Council for the year June 1, 1928 to June 1, 1929 showed that the average annual earnings for workers in all crafts were $2,058 . . .

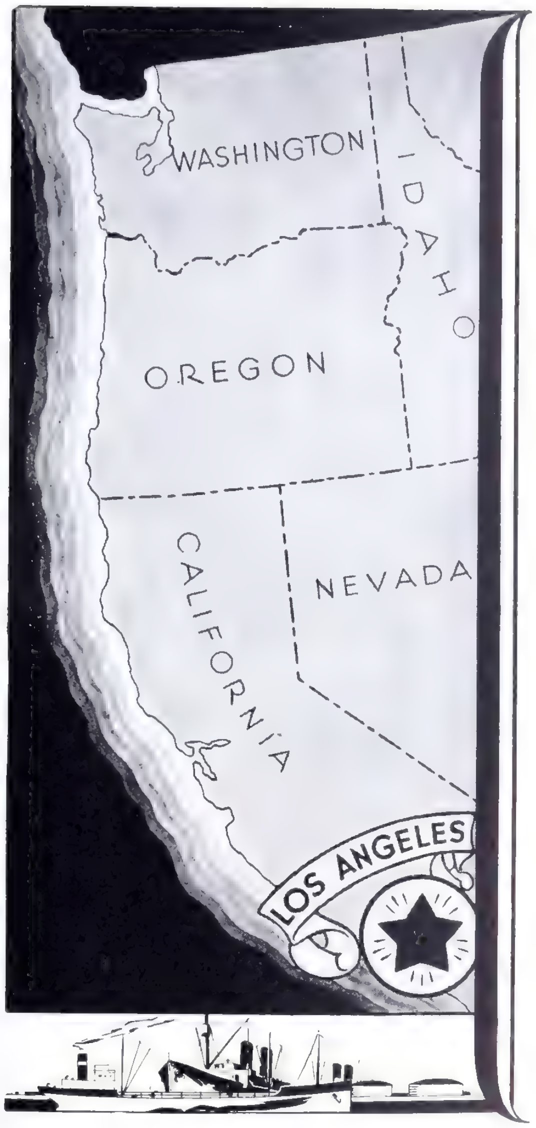
Very truly yours,
Samuel Klein, Executive Director, Industrial Council of Cloak, Suit and Skirt Manufacturers, Inc.

Because of limited space FORTUNE obviously could touch only upon what seemed to be the industry's most important and "individual" phases. From a number of conflicting statistics, including those in the source material to which Mr. Klein has reference, FORTUNE chose those which seemed, and still seem, most reliable and impartial.—Ed.

CREDIT

Credit should have been given to Kennedy & Co. for the use of the colored print of early English railway carriages reproduced on pages 62-63 of the July issue of FORTUNE.

2,900,000 New Customers Added to Your Western Market Since 1920



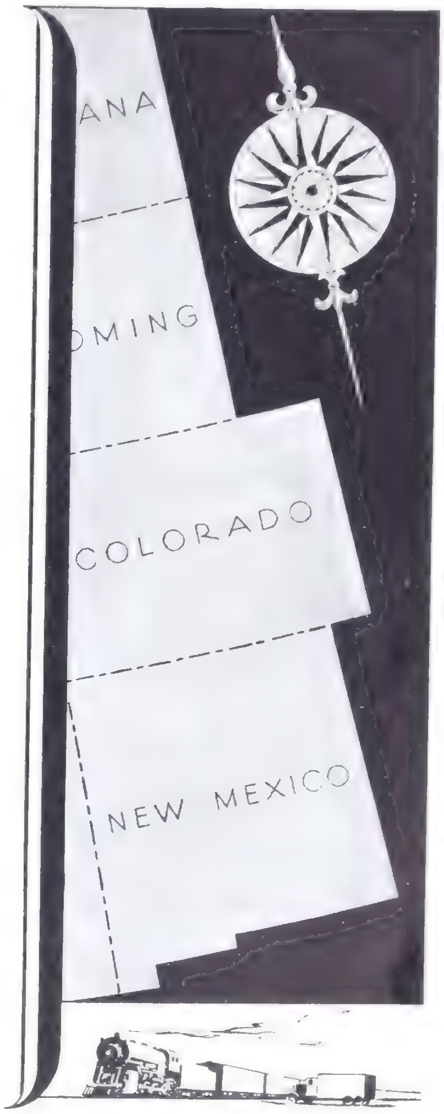
—a total market today of Twelve Million People in the eleven Western States...an increase of 32% in ten years.

Oregon, Washington and California combined, increased 2,596,005 46%

California alone increased 2,226,784 64%

Southern California increased 1,630,333 107%

Los Angeles County increased 1,263,202 134%
Population Now 2,199,657



More than half the increase of 2,920,000 in the eleven Western States occurred in Southern California. The manufacturer who considers distribution costs carefully will readily see the advantage of locating his plant in this concentrated market . . . from which the entire Western market is served at lowest per capita distribution cost.

Industrial LOS ANGELES COUNTY

Manufacturing Executives Are Invited to Write to the Industrial Department, Los Angeles Chamber of Commerce, for Detailed Information Regarding this Great Western Market

THE BRICK AND THE SCARAB

When ordinary letters were picture drawings on sun-dried bricks, Pharaoh of Egypt, ruler of the civilized world, communicated with his satraps by messenger. His authority and prestige was represented by a scarab, symbol of eternal life, carved from a jewel and engraved with his signature.

Some business firms by the inferior quality of their stationery still suggest the letter scratched on the crude brick. Others see the wisdom of the symbol of the scarab and put their signatures on Crane's Bond only.

Crane's Bond unfailingly carries a prestige message. Wherever your letters go, it will bespeak your good taste and the high standing of your business.

CRANE'S
BOND

for letterheads and envelopes

CRANE & CO., Inc. • DALTON, MASS.

Statistics

Community chests depend upon manufacturing and retail business for some 22 per cent of their funds. Of these 47.2 per cent come from manufacturing companies, 2.9 per cent from chains (who usually contribute only where public opinion needs smoothing), 17.1 per cent from banks and trust companies, 22.4 per cent from retailers and wholesalers, 7.4 per cent from public utilities other than transportation.

• • •

The Senate, with ninety-six members, runs up a cleaning bill for its corridors and offices of some $150,000, while the bill for keeping the House of Representatives' building (435 members) is $90,000.

• • •

The operator of a Japanese typewriter requires a directory at his elbow to guide him in finding the more unusual of the 7,000 characters on the machine. If he is expert, he can reach a speed of 60 words a minute. It is not quite fair, however, to compare this with the speed record for American machines, held by George L. Hoffield of Paterson, New Jersey, with 675 letters, 135 words a minute. A Japanese character may express many words, one click of the key inscribing the "old purple hat of my grandfather."

• • •

About $13,000,000 are paid yearly in wages to Canadians working in U. S. factories near the border, and some $250,000,000 are sent each year by U. S. wage earners to Europe to support friends or relatives. In 1920 the huge sum of $700,000,000 was sent to relatives by U. S. workers. Within the last ten years an estimated total of $4,000,000,000—far greater than the gold movement in the same period—went to Europe from immigrants in the U. S. The average yearly remittances, $250,000,000, exceed what the U. S. receives in principal and interest on war debts. Immigrants entering the U. S. bring with them each year an average of $25,000,000.

• • •

Large factories are safer places in which to work than small ones. Of 1,485 studied in Greater New York, those employing over 100 men had 18.08 accidents per million man-hours. Factories employing less than 100 had 22.36 accidents per million man-hours—almost 25 per cent higher frequency rate.

• • •

The U. S. windmill business would indeed be wretched were it not for exports. In 1922, 15 per cent of the total production of windmills, not including any parts, was exported. Last year 44 per cent went out of the country, largely to the Argentine. Total value of the industry declines but little in spite of competition with internal combustion engines—$4,125,000 in 1928 to $4,063,000 last year.

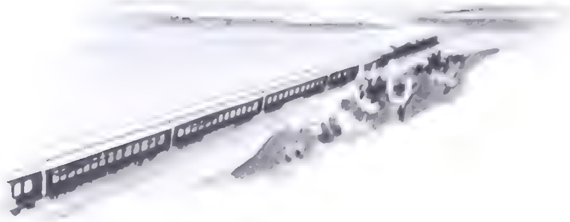
• • •

A wedding, well done, in New York costs between $50,000 and $100,000. A few items which contribute to the total: 5,000 invitations: $5,000; organist: $350 to $1,000; singer: $150 to $1,000; 300 pews properly decorated: $4,500; altar decorations bring the total to $7,500; food: $7,000; orchestra: $1,000; bridal clothes between $5,000 and $10,000; bouquet—for the bride: $100, for the attendants: $20 apiece. Attendants' costumes and gifts add a few thousands more. Fee to the minister: $500; gift to the church: perhaps $500. Smaller items: marriage license: $2.00; use of the church: $25; canopy: $30; tips to traffic policemen: between $25 and $150.

• • •

Railroads proudly boast that the average speed of freight trains has increased from 13.8 to 13.9 miles per hour in the last few months. Average daily movement per freight car is about thirty miles—a figure made low by including all cars in service, those waiting for a load, being unloaded, being loaded, and being repaired.

department stores do . . . banks do . . . theatres do . . . office buildings do . . .



Now CRACK TRAINS

will offer Summer Patrons

COOL, REFRESHING WEATHER

NSIDE—WEATHER PLEASANT as that of a mountain resort. Santa Fé's flyer, "The Chief," may speed through desert or under scorching sun, but the liner is cool and refreshing, because of Manufactured Weather.

OUTSIDE—WEARYING, WITHERING HEAT. Now this bane of summer travel can be removed with Manufactured Weather, which also washes out dust and cinders, and reduces humidity to the comfort point.

ALREADY, important office buildings, banks, department stores and theatres are providing real summer comfort for their patrons—with Manufactured Weather.

Now, you can enjoy this same cool and refreshing weather when you travel. "The Columbian" of the B & O lines between New York and Washington carries "The Martha Washington," the first air conditioned diner—and "The Chief," crack train of the Santa Fé carries Diner *No. 1418*, the first transcontinental air conditioned car.

Clicking along over the rails from Chicago to Los Angeles, or from New York to Washington, you enjoy an atmosphere as clean and pleasant as an outside cabin on an ocean liner cruising through perfect weather . . . as refreshing as if you were thousands of feet above the earthbound dust and heat.

Recently, during the terrific heat wave, as "The Chief" sped across the burning Mojave Desert, passengers were amazed and pleased to find the diner cooled to 37 degrees below out-of-door temperature.

There are no cinders . . . no dust . . . because the air is cleaned. No door or window need now be opened. Muggy, uncomfortable air is dehumidified. And all the time, this pleasant, *conditioned* air is kept in gentle, draftless motion.

Manufactured Weather opens up untold possibilities for railroads themselves. Larger revenues from increased passenger traffic . . . both business and vacation. Public preference and enhanced reputation for the road that offers patrons weather that is always comfortable.

Manufactured Weather is the name given exclusively to the conditions of air comfort produced by the systems of the Carrier Engineering Corporation. A request to our Newark office will bring you full information about what it is doing in *your business field*.

Carrier Engineering Corporation

NEWARK, NEW JERSEY

OFFICES: New York, Philadelphia, Boston, Chicago, Cleveland, Washington, Detroit, Dallas, Los Angeles

EXPORT DIVISION: 505 Fifth Avenue, New York

ARRIER ENGINEERING CO., LTD.
LONDON, PARIS, BOMBAY,
CALCUTTA, JOHANNESBURG

CARRIER
LUFTTECHNISCHE GESELLSCHAFT
STUTTGART, BERLIN

Manufactured Weather *makes* "Every day a *good* day"

Imitations never quite succeed in being WOOD . .

THE BEAUTY of well-finished wood cannot be imitated. Curves, swirls, and patterns artificially imposed on alien surfaces are cold, mechanical . . . lack the "natural" charm of wood.

In the executive office, where dignity and good taste are paramount, wood furniture is essential. The finer period desks and chairs can be obtained *only* in wood—master craftsmanship does not adapt itself to unwieldy substitutes.

All employees prefer wood furniture . . . Throughout the entire organization the charm and friendliness of wood equipment encourage efficiency.

Wood office furniture is stronger, pound for pound . . . quieter . . . does not deteriorate, corrode or bulge out of shape . . . lasts indefinitely. *And wood desks actually protect papers and valuable data from fire better than do desks of substitute materials.*

The leading American manufacturers of wood office furniture provide a wide range of appropriate models—period suites for executives . . . desks and chairs for other employees . . . furniture for all office needs. Consult your local dealer.

SEND for the free booklet, *"Planning the Modern Office in Wood,"* which contains complete data on office planning, and a handy chart that will help you lay out an attractive, efficient office to meet your individual requirements. WOOD OFFICE FURNITURE ASSOCIATES, INC. Affiliated with the National Lumber Manufacturers Association.

An executive office of the STANDARD OIL COMPANY (NEW JERSEY) *Furnished with wood office furniture, this room has beauty . . . personality . . . character.*

The stenographic room, GENERAL OUTDOOR ADVERTISING COMPANY, *New York City. Large organizations everywhere find that employees prefer the warmth and friendliness of wood office furniture.*

WOOD OFFICE FURNITURE

Wood Office Furniture Associates, Inc.
Dept. 310, 420 Lexington Ave.
New York City

Gentlemen: Send me the free booklet, "Planning the Modern Office in Wood."

Name____________________

Address____________________

City____________________State__________

WORLD CRUISE

. . . *but*

HOW?

- MADEIRA
  Residents' Ball . . .
- ALGIERS
  [illegible] houses . . .
- ATHENS
  Shrine of beauty . .
- BETHLEHEM
  for Christmas . . . .
- CAIRO
  New Year's Eve . .
- INDIA
  The Taj Mahal . .
- CEYLON
  Rubies, bullocks . .
- SUMATRA
  Pointed roofs . . . .
- JAVA
  Flower mountains
- SIAM
  White elephants . .
- CHINA
  Swarming East . . .
- JAPAN
  Massive Buddhas .
- AND 10
  other countries . . .
- IN 137 DAYS,
  From $2000 . . . . .
- YOU LEAVE
  winter behind . . .
- DEC. 2
  from NEW YORK

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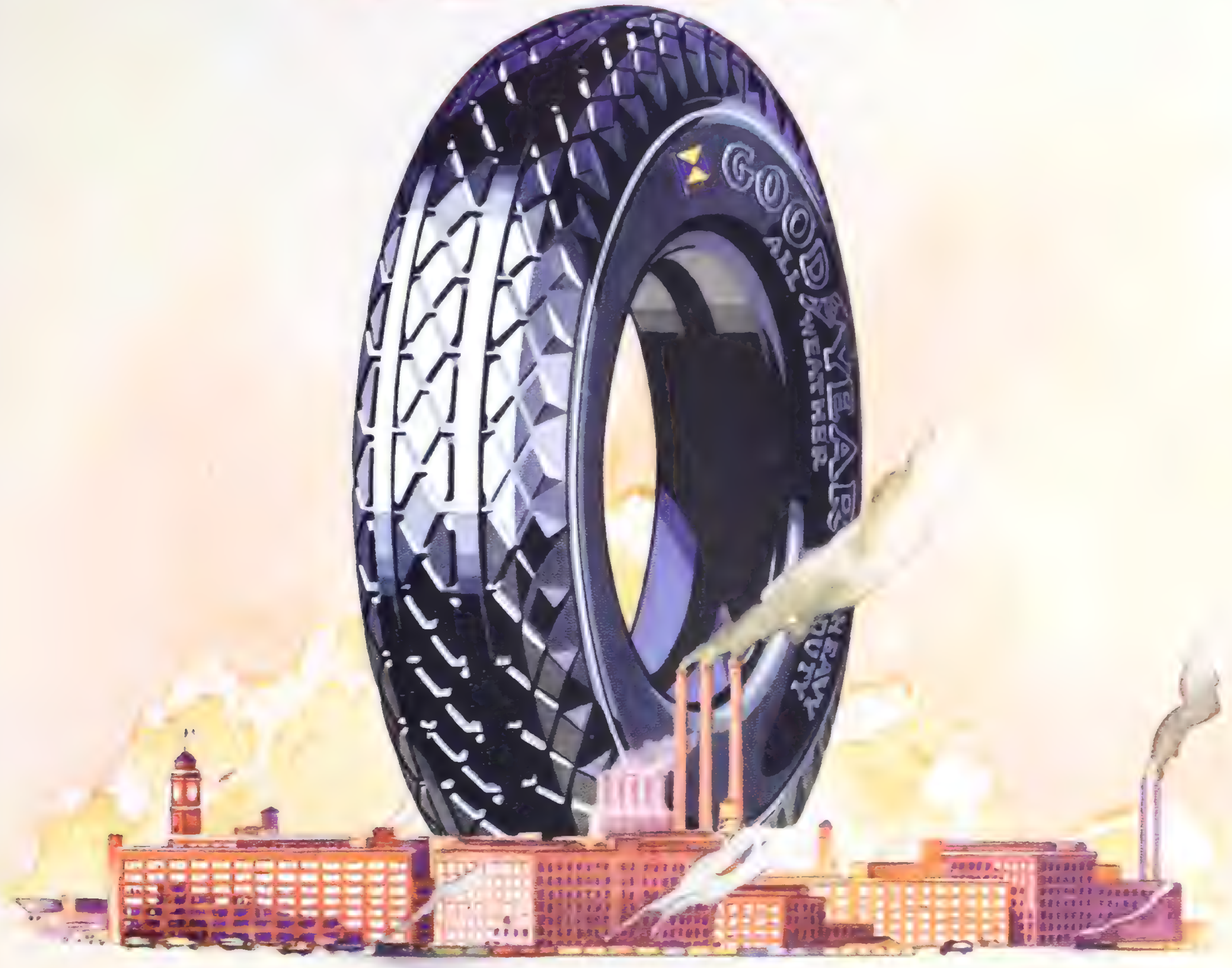

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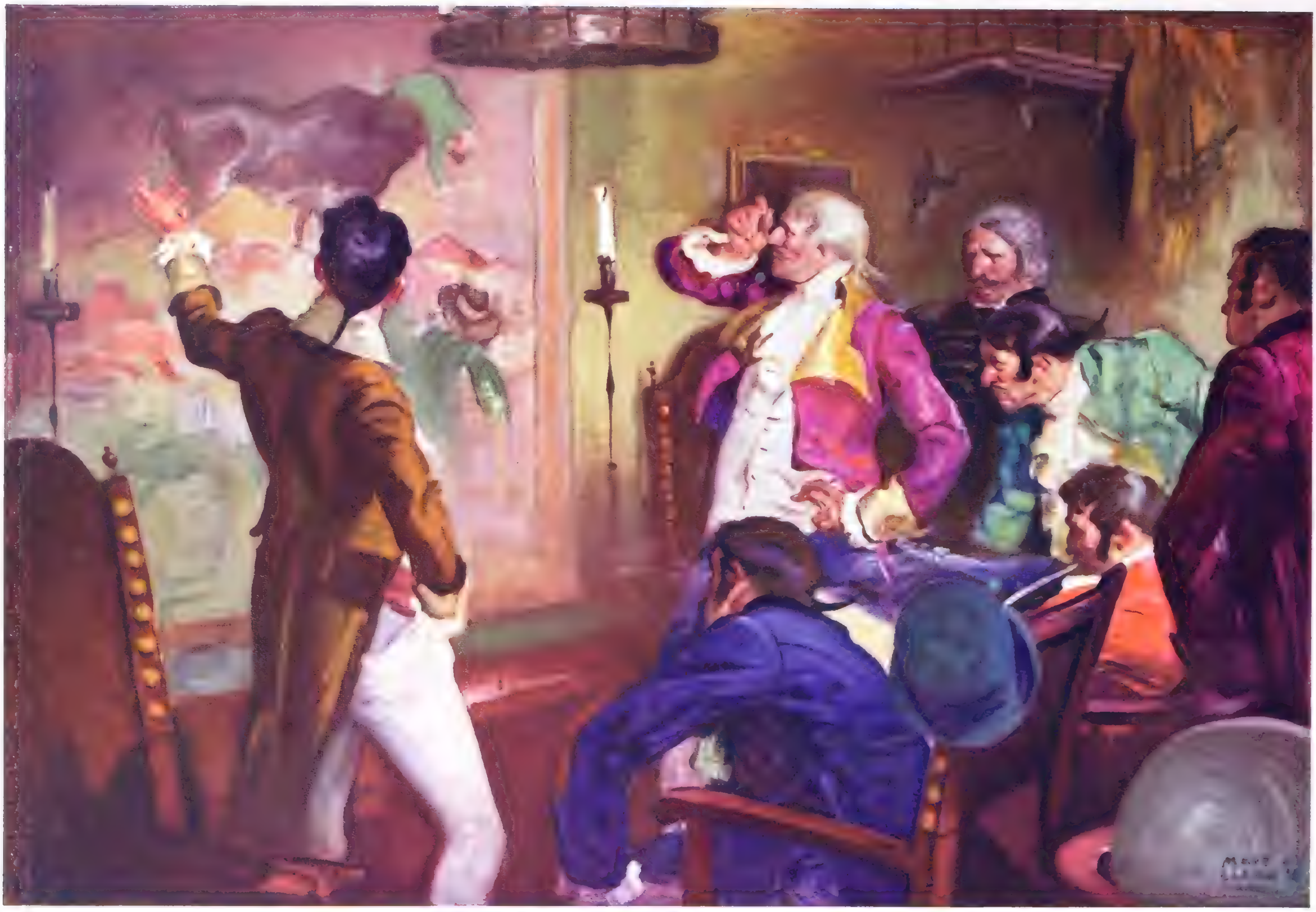

FOR A DISCRIMINATING CLIENTELE

Through all the ages fine things have been produced because there were those who could appreciate their ownership. The celebrated Goya tapestries executed in Spain in the late 18th century, were woven under royal patronage. Today Packard builds fine cars for those who appreciate and are satisfied only with the truly beautiful and luxurious in transportation.

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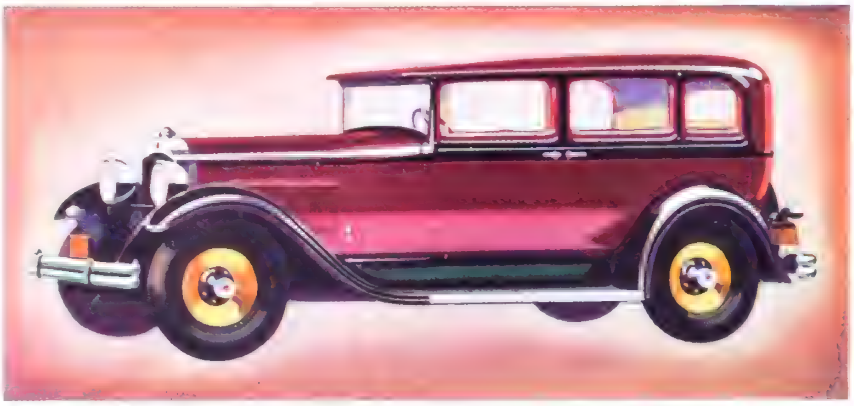
PACKARD

ASK THE MAN
WHO OWNS
ONE



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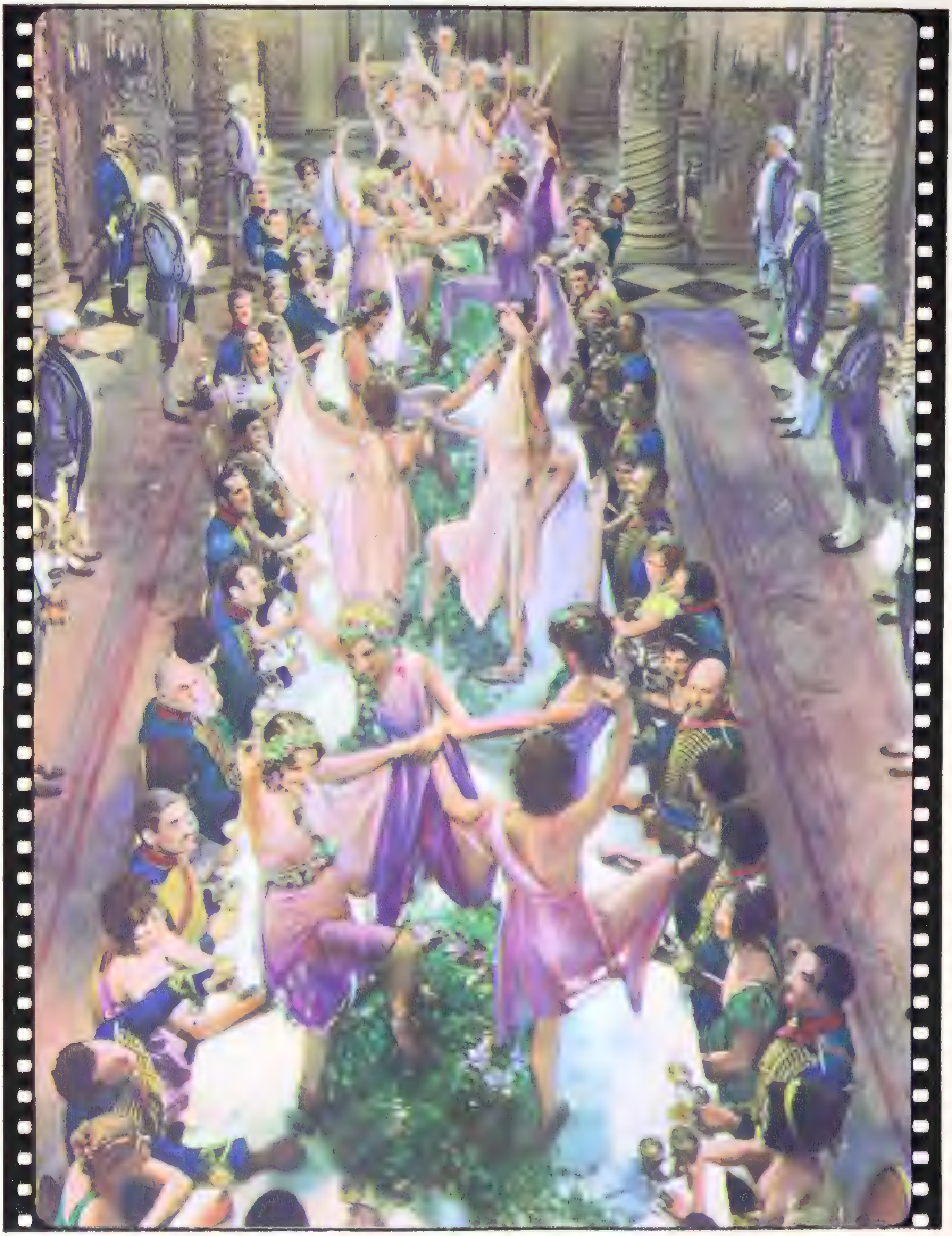


Courtesy First National Pictures

A SHOT FROM *SONG OF THE FLAME*, PRODUCED BY FIRST NATIONAL, WHICH IS OWNED BY WARNER BROTHERS. THEY TOOK THE LEAD IN COLOR AS THEY DID IN TALKIES

Color and Sound on Film

Classic examples of how Science raises the already enormous gamble of Showmanship—the fastest revolution in industrial history and the stars thereof.

LATE summer advices from Hollywood were that several big producers are thinking of going back to silent films—an idea that has only to be mentioned in order to become ridiculous. A more reasonable proposition is that the musical comedy film is no longer good: but *Whoopee* is one of September's hits. The "Westerns" are to be the big thing this season—or have they already been overdone? Costume stuff has certainly been run ragged, yet costumes always come back. To a business of staggering proportions faced with impenetrable doubt, the Harvard Business School suggests a survey. Possibly a questionnaire might be sent to the inhabitants of First Avenue and Keokuk asking what kind of pictures they would like next spring. Then, when Hollywood is put on a Harvard business basis, the most exciting gamble since fish first tried to live on land will have been eliminated from human affairs.

Compared with the last twenty years' gamble in the film theatre, Monte Carlo is a friendly game of dominoes and Deauville a county fair. Essentially it has been the old game of guessing human emotions practiced by politicians, playwrights, and merchants everywhere and always. But also, in the film theatre the gamble of Showmanship has been complicated by its partnership with Science.

It was by the invention of the motion picture that Science for the first time in the world's history directly affected drama. Before then the only excursions of Science into this ancient and popular art had been represented by trivial developments such as footlights and make-up. But within half a generation after *The Great Train Robbery* (1903) the theatre of photograph-pantomime had completely eclipsed the spoken drama; it had established itself in the lives of all western people to a degree exceeded only by the church of the middle ages; it had produced in Charles Chaplin and Mary Pickford characters of incredible if not indelible fame. The only trouble with Science is that it does not know how or where to stop. It should have let us have at least a century of photograph-pantomime. Instead, we were no sooner beginning to master the technique of this new and universal art than Showmanship saw a way to exploit what Science had had available for several years—the crude elements of photographic *spoken* drama. And now, with the talkie still in its infancy, both technically and artistically, comes the exploitation of color, while from around the corner falls the shadow of Television.

Reflections on a revolution

The talkie revolution having been accomplished (beyond comparison the fastest and most amazing revolution in the whole history of industrial revolutions), the producers say they are glad it happened. Talkies, they say, came just as the popularity of the movies was beginning to wane. Despite the general agreement on this proposition, it remains absolutely unprovable and extremely doubtful. Already—after only two years of talkies and long before they have been perfected—there is another distinct drop in movie attendance. Looking for a reason ("bad times" is inadequate) we find a circumstance which contains one of those strange paradoxes which haunt the showman's career. The talkies, bad though they may be, are *too* good. This is the theory: in the silent days people were kept movie-minded by the few great pictures (Chaplin, Fairbanks, etc.) which appeared every year; but also, and much more importantly, they made a regular habit of going to the movies several times a week; if the picture were fair, they got a thrill; if it were poor, they communed peacefully and beneficially with their cud-like souls. Now the talkie brings them a definitely higher form of entertainment; from a good talkie they get a far greater thrill than from any except the very best silents; but before going to it they want to be sure that the talkie is good; otherwise, they are not thrilled but simply disturbed; in short, the talkie has made the public critical.

Nevertheless the talkie has completely nullified the silent screen. This is entirely characteristic of the machine. A new machine (or process) does not merely *add;* it *replaces.* In most lines the replacement is gradual, but in the show business nothing can prevent the replacement from being almost instantaneous. The reasons are obvious. Price, for example, is no object. A public which has tasted talkies cannot be lured to silents by offering the latter at cut-rates. (On the contrary, a conviction that brass pipes or colored porcelains are best for bathrooms does not lead to immediate replumbing.) Now this also results in the fact that in the show business it is quite possible for a relatively unimportant innovation to have consequences almost as serious as a major invention.

Courtesy Warner Bros.

A BILLION-DOLLAR BUSINESS: THE CLIMAX

Color

An ideal illustration of the weird relation between Science and Showmanship is to be found in the most hotly disputed of current developments: color. The importance of color to drama is as nothing compared with the importance of voice. But, even though it may add little to dramatic interest, it obviously has the possibilities of *replacing* black and white. This replacement threat makes color a deuce in a game wherein all deuces are wild. While the players bet millions pro or con, let us see whether this latest threat can be rationalized from the side lines.

The first surprising detail about color is that it makes Boston a sort of sub-capital of the movie world. It is a better than ten to one bet that every color film you have seen was made in Boston. For the history of colored movies is almost entirely the history of Technicolor, which began in Boston years ago and whose main plant is still there. A new plant in Hollywood went into operation last spring. The hero of Technicolor is Dr. Herbert T. Kalmus.

Forty-nine next month, Dr. Kalmus stands about six foot three. Under brown hair that is fast turning gray, a pair of blue eyes expresses the unusual union of keen business ability with pure scientific excellence. Perhaps as a result of this his suits are always pressed, his words always precise. Conservative in taste, he favors blue, black, and gray color schemes, plays golf, and is absorbed in Technicolor. At the same time, his personality has its lyric side, developed by years at sea as a boy before working his way through M. I. T., where he graduated in 1904. For lyric satisfaction he listens to music, composes on the piano for his own amusement, owns the home of an old sea captain in Centerville, Massachusetts, and eighty acres of wooded land on Cape Cod, where he and Mrs. Kalmus camp and rest. Lovely Mrs. Kalmus with titian hair is in charge of the Technicolor art department and used to pose for early Technicolor experiments in Florida. Thus is the entire family absorbed in the development of this most modern of arts, Dr. Kalmus having started his researches in 1915 and now being both president and general manager of the Technicolor Motion Picture Corporation. In 1912 he was head of the Research Laboratory of Electrochemistry and Metallurgy for the Canadian Government.

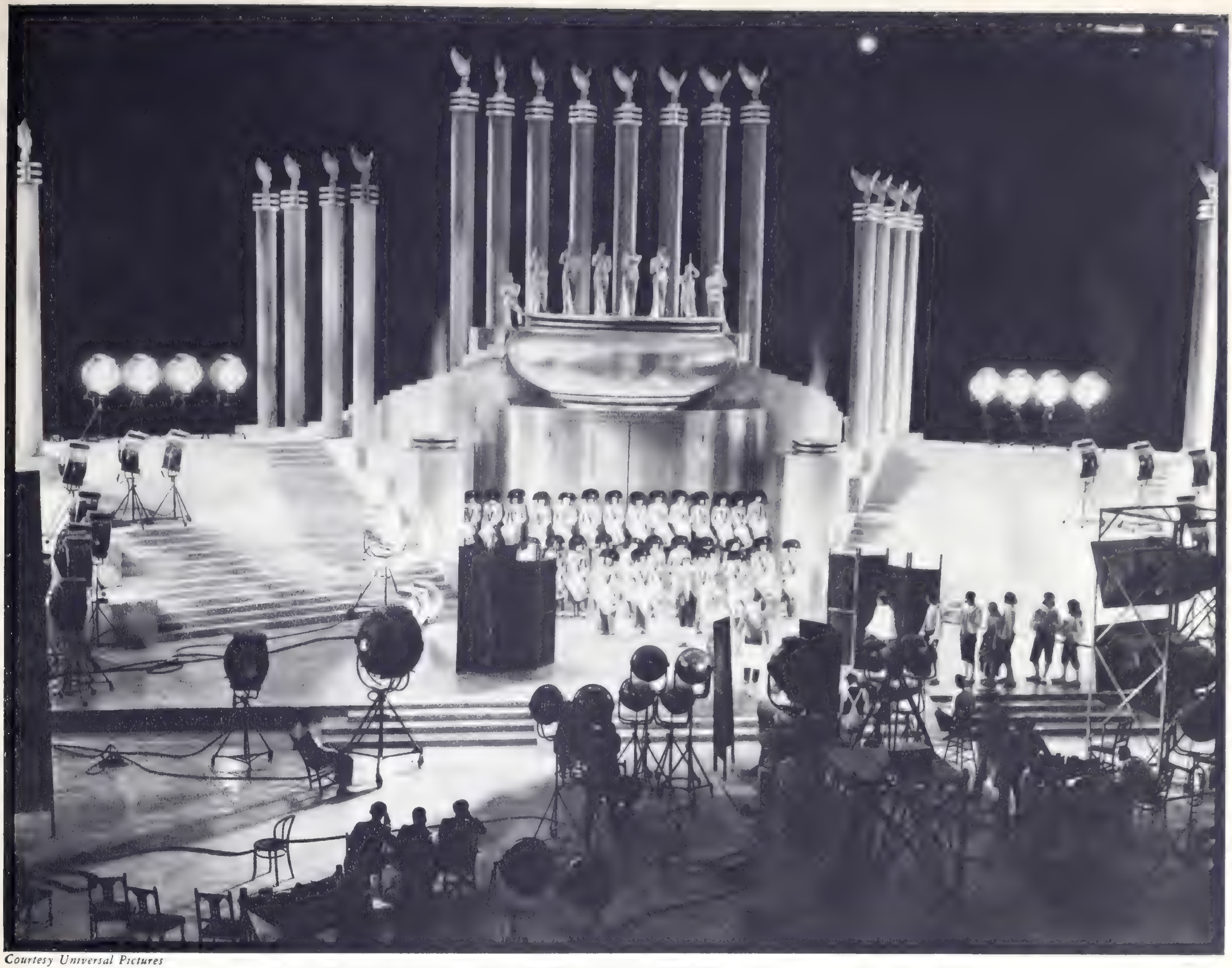
For fifteen years he has had only one occupation: to make color movies. Ten years ago he produced in the laboratory colored movies as good as or better than any we have seen in the theatres. But the gap from laboratory to theatre was immense. The first real opportunity came in 1922 through the Brothers Schenck; Joseph M. loaned to Technicolor the facilities of the United Artists studio to make *Toll of the Sea*, starring Anna May Wong, and Nicholas M. distributed the picture through Metro-Goldwyn-Mayer. Paid for by Technicolor, this was the first all-color movie except for two sporadic attempts by other methods seventeen years before. M-G-M gave color a further boost by being the first to use it for a few scenes in their own big pictures (*Ben Hur*, *The Merry Widow*). Jesse Lasky of Paramount was the first producer to gamble an extra $100,000 on a all-color movie (*Wanderer of the Wasteland*, 1924), and Douglas Fairbanks followed with *The Black Pirate*. But it was the Warner Brothers who took the first real gamble on color, just as they were the first to gamble in sound. Having scooped the world in 1927 with sound, they undertook a color scoop in 1929 by contracting with Technicolor for no less than forty all-color pictures.

Courtesy First National Pictures

ONE THOUSAND DOLLARS PER WORKING HOUR

Studio set used in Marilyn Miller's talkie version of her Broadway hit, *Sunny*. For sets in such a film $40,000 is a probable cost. This picture (by First National) took eight weeks to produce: total cost about $1,000 per working hour.

He who has seen a camera which will take color movies has seen a rare sight. There are only about fifty of them in the world—two years ago there were less than ten. Each costs about $4,000 as against several hundred dollars for non-color cameras. The actual photography of a color-movie is done from beginning to end by Technicolor crew—not by a producer's own cameramen. When the picture is taken, the master negative is sent to Boston, where with infinite care and patience the positive prints are made. For this complete photographic service Technicolor is paid about eight cents a foot by the producer, as against about two cents a foot which black and white photography costs the producer. This difference in mere photographic cost would stop anybody but a showman. A black and white feature picture contains about 7,000 feet of film and 200 prints will be required, making 1,400,000 feet in all. At two cents each, that is $28,000. The same picture in color, at eight cents a foot, will cost $112,000. Thus, simply for photography, a color picture raises the gamble by some $84,000. But far more than that is spent in the extra time consumed in making a color



Courtesy Universal Pictures

A SET FROM *KING OF JAZZ* WHICH COST UNIVERSAL $1,650,000 TO PRODUCE

For his performance in this picture, Paul Whiteman is believed to have been paid the largest salary ever known in Hollywood. In addition Universal ran a special train to the West Coast for the thirty-four members of the super Whiteman band. They took their wives. After arrival the theme for the story was changed, and it had to be rewritten. Universal sent the thirty-four members of the band and their dependents back East, in a special train. Later they returned to Hollywood (but not on a private train) to make the picture. Altogether they were on the pay roll nine months. John Murray Anderson was the director, and he knew nothing about the movies except the myth that Hollywood was made of gold. So a good time was had by all but Universal and their troubles were just beginning, because the picture didn't take in New York. However, the provinces have come to the rescue, and now Universal hopes to break even.

picture. Roughly, we may say that the same picture which would cost $750,000 in black and white will cost at least $1,000,000 in color. Let us hasten also to say that except for years of struggle in solving practical production problems, such a color picture would cost nearer $2,000,000 if it could be made at all. Here we must also note that there are many other color processes in competition with Technicolor. But however fine their laboratory product may be, none of them can be taken seriously until it has actually taken a full-length picture under Hollywood conditions and at a price somewhere near eight cents a foot. Paramount is experimenting; Fox has built a plant since abandoned. Howard Hughes has Multicolor, with a plant in Hollywood, while perhaps most advanced of Technicolor rivals is the Colorcraft Corporation, with a new plant on Long Island scheduled to be in production this fall.

Color and Competition

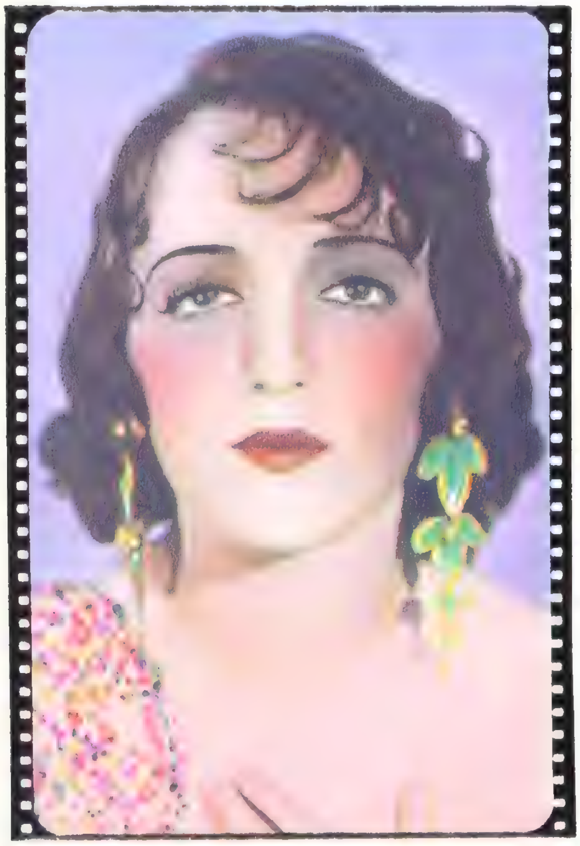
Now the producer is naturally reluctant to add $250,000 to his ante on a special production or $100,000 to his ante on the regular program picture. If there were only one producer in Hollywood, he would probably consign all color processes to the bottom of the sea, because it is scarcely arguable that color will materially increase the total "consumption" of movies. But competition being what it is, the producer must ask himself: will color develop to a point where black and white will fail to produce the illusion it always has produced? And therefore, will color, this season or next, or next, replace black and white? That is the question.

A year ago the answer seemed to be: "Yes—and soon." The talkie revolution had come in 1928 so much faster than anyone could have foreseen that in 1929 all the producers, afraid of being scooped again, followed Warner's lead in making huge non-cancellable part cash in advance contracts for color in 1929-30—nearly all, of course, with Technicolor. And they were, of course, wrong. For two reasons: (1) because, as aforesaid, the importance of color to drama is as nothing compared to the importance of voice; (2) because imperfect color is far more noticeable than imperfect sound (our eyes are many times more sensitive than our ears). For these reasons, color caused practically no sensation (few people realize how many

[*Continued on page 124*]

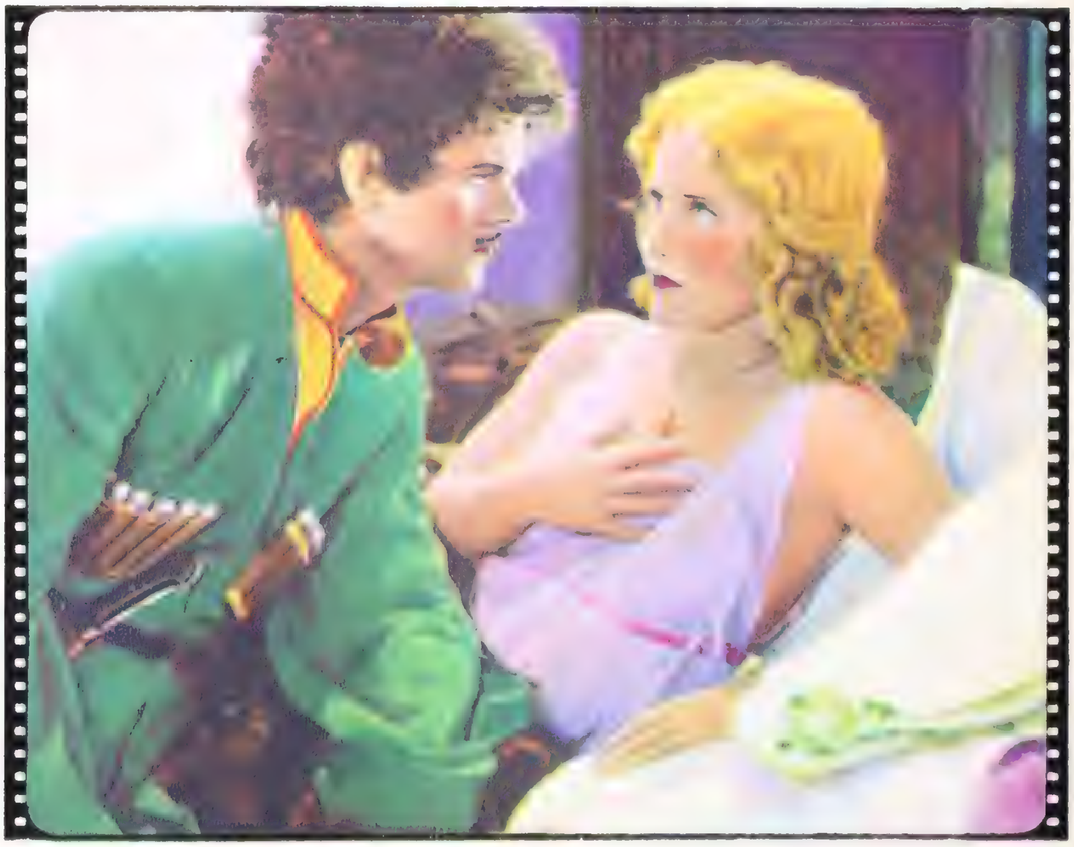
PAUL WHITEMAN

RICHARD BARTHELMESS



Photos Courtesy Technicolor, Inc.

BEBE DANIELS



LAWRENCE TIBBETT

Pictures on these pages are, with one exception, approximations of color shots from recent movies made in Technicolor. The exception is CLARA ("It") BOW. Although Paramount has recently renewed her contract (on promise of good behavior) and although she has red hair, her charms have not yet been revealed in color movies. However, the red hair of Paramount's NANCY is ably exploited in Follow Thru, due to open September 27.

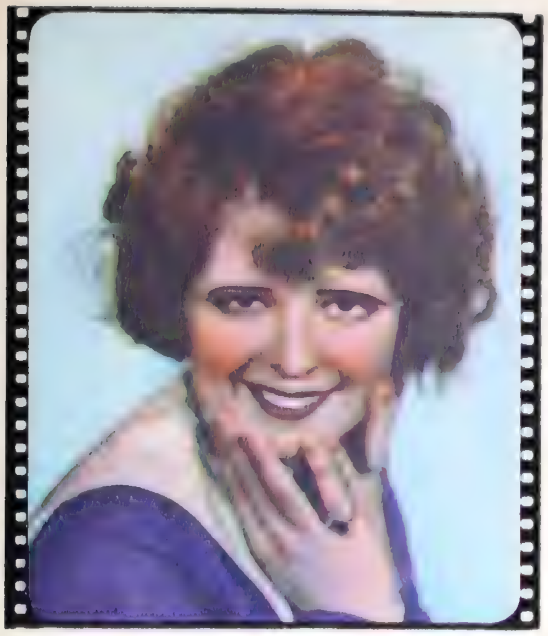
BEBE DANIELS is the biggest star of RKO, the newcomer among Hollywood producers.

LAWRENCE TIBBETT'S is the best operatic voice yet heard in a full-length cinema. M-G-M's The Rogue Song was a huge hit with little but song and color to commend it.

But color never makes a poor picture good as was proved by RICHARD BARTHELMESS' Son of the Gods, wherein he was a much less exciting Chinaman than in Broken Blossoms, which helped to make him famous years ago.

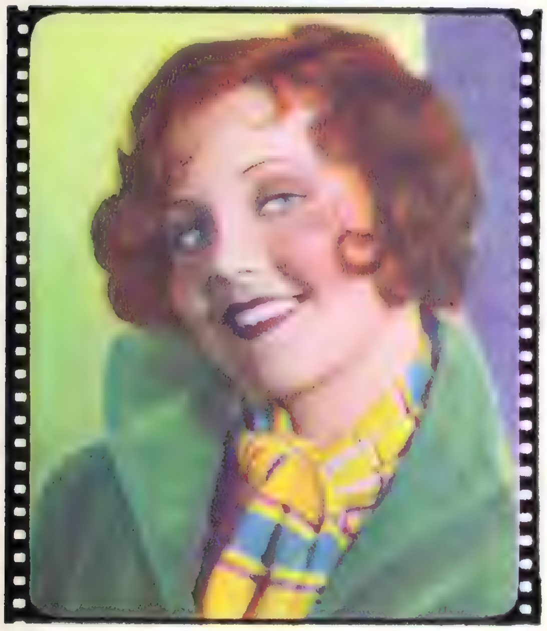
MARION DAVIES was a great star before the recent mechanical revolution in the movies. In The Florodora Girl she triumphed over new technique—a delightful talking comédienne, garmented (for one sequence) in color.

The ALBERTINA RASCH BALLET was seen again in color in The Rogue Song.



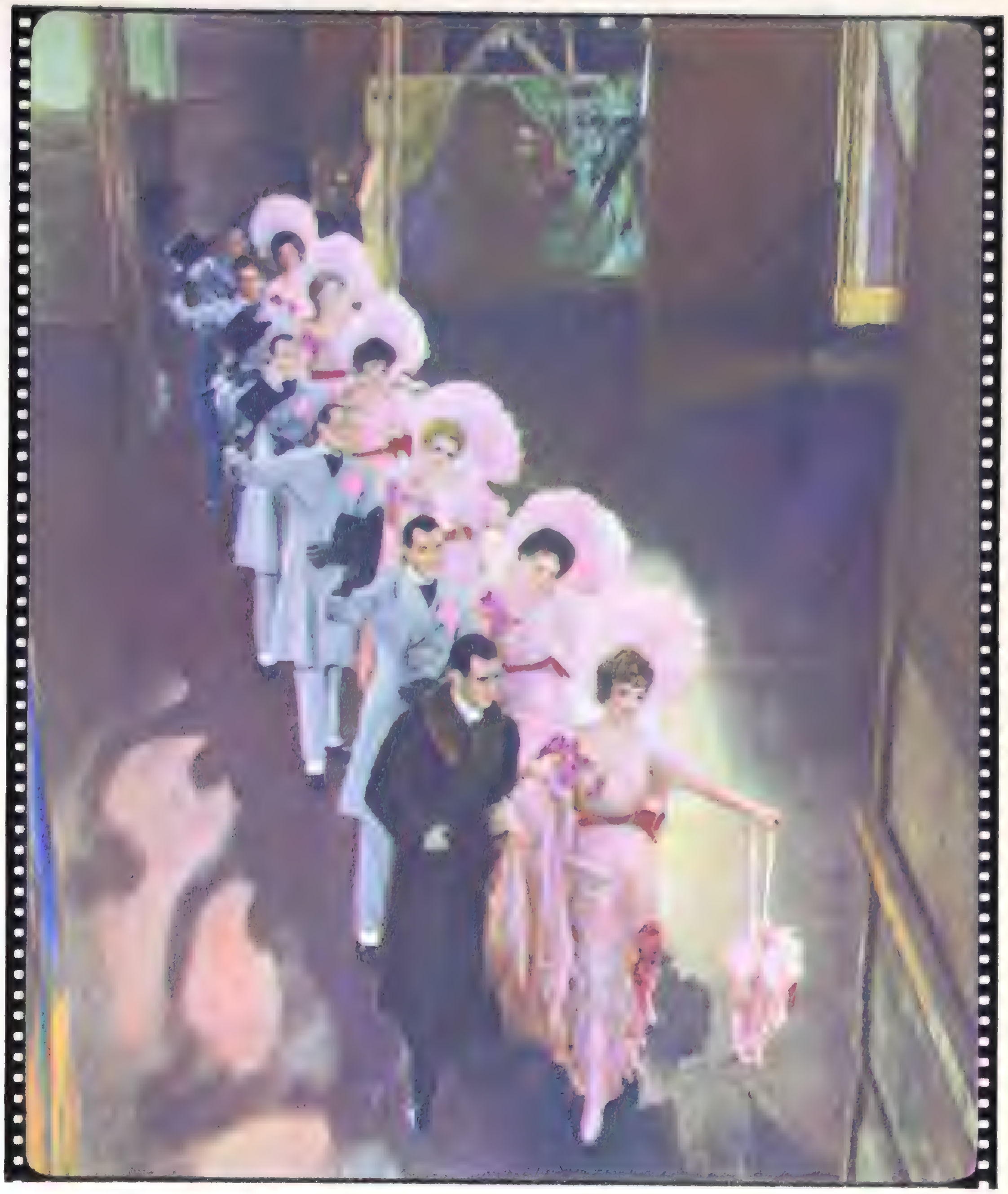
Courtesy Paramount Publix Corporation

CLARA BOW



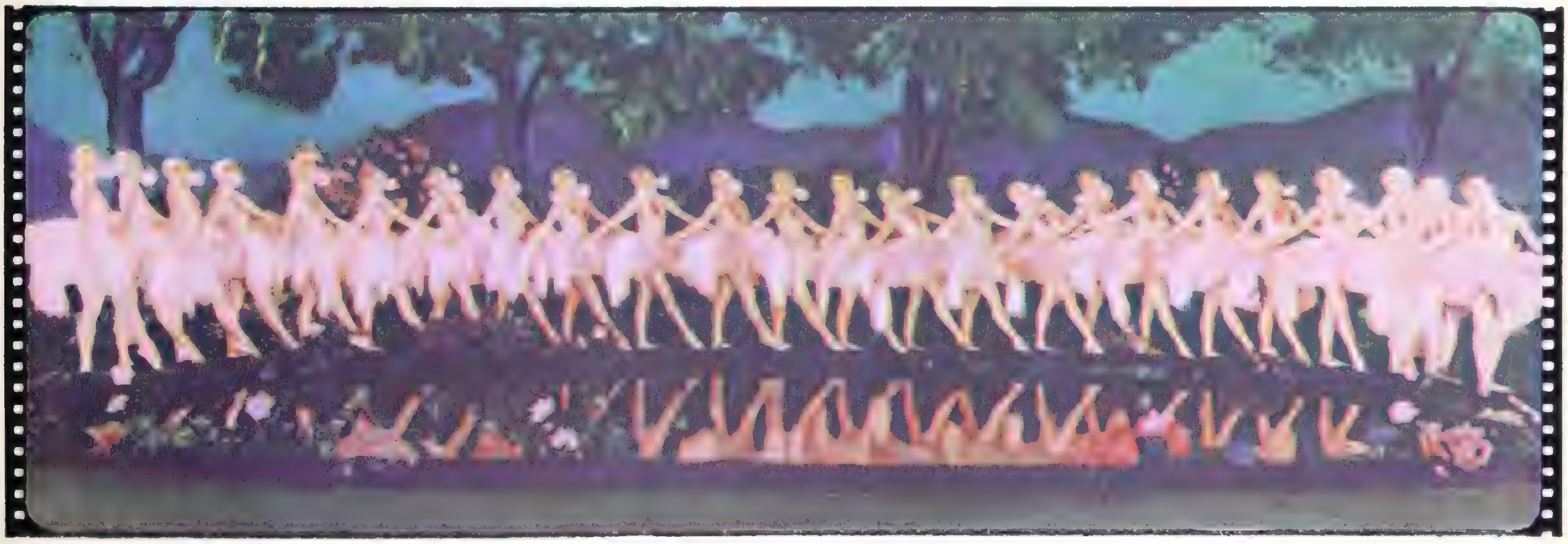
Courtesy Technicolor, Inc.

NANCY CARROLL



Courtesy Metro-Goldwyn-Mayer

FLORODORA GIRL



Courtesy Metro-Goldwyn-Mayer

ALBERTINA RASCH BALLET

Man and Woman and the Public

For the most part, the old lures are still the best. But not yet have we seen the great talkie star.

IT was not altogether a surprise to producers when they found that the apparent possibility of freeing their business from the star system was an illusion. For one thing the public gave evidence that the sound device, though effective as a novelty and vastly promising as a permanent enrichment of their favorite diversion, was not enough by itself to command gate receipts. Cinema-seers continued to pay down their money in impressive quantities only at the box offices of those theatres on whose firesign they saw the great names they knew and approved. For another thing, the invasion of legitimate stage actors and actresses of Hollywood failed to produce much change in the personnel of the picture business. By degrees the invasion dwindled, then stopped almost totally. A few famous names—notably Vilma Banky, Emil Jannings, and Adolphe Menjou—slipped out of sight, uprooted by the new conditions, but a great proportion of established stars, in spite of all predictions to the contrary, held their places.

Clearly the change that sound had produced in the industry was not the subordination of stars to character actors. Rather it had proved a field for the development of a new and infinitely more important kind of star and for enhancing the value of those already created stars who were able to meet the different conditions. The box office following of the leaders in silent pictures might become insignificant compared to that waiting for actors who, in addition to personal charm and pantomimic ability, could make their voices salable. Already the potency of voice alone as a mechanic for creating reputation had been proved by radio. Picture-makers understood the significance to their own business of the crowds who stormed the personal appearances of radio's arch-interpreter of sentiment, Hubert Prior Vallée. They saw a new meaning in the nation's response to a pair of unexceptional vaudevillists who successfully introduced an aural blackface comic strip. For the radio business to have national stars proved that the public could literally be taken by the ears. It suggested that the great dramatic actors and singers of the talking picture may create in a world audience an idolatry equal to that which the dramatic actors and singers of past decades exerted on isolated capitol cities.

To date no star has arisen as the first of the talking picture's giant aristocracy. Instead, a limited group of able players have entrenched themselves safely in various specialized and individual methods of appeal. First, the females:

Passion, mysterious, provocative, combined with high-powered individual fascination . . .

GRETA GARBO

Critics predicted that her Swedish accent would make her useless before the microphone. Instead, her first talkie, *Anna Christie*, in which the accent was essential to the character, has been a box office smash and a general selection as the best talkie released in the first six months of 1930. Besides being her first talkie, it was the first picture in which Metro-Goldwyn-Mayer had ventured to project her allure without its usual decorative support, in threadbare clothes, against a background unchangingly sordid. *Romance*, her second microphonic effort, her deep, slow voice, impelling in its monotony, made negligible even the absurdity of her being cast as an Italian soprano. Such is the force of her charm and the addiction of her following that even before her voice was recorded, the silent pictures she made continued to compete successfully with the talkies made by other stars. Termination of her romance with John Gilbert did not interfere with the steady growth of her popularity, and the mystery surrounding her personal life has been increased by the fact that she lives in retirement in Hollywood, avoids *première* performances, and goes to see her own pictures when they are shown at little suburban theatres, wearing dark glasses, a polo coat, and a man's hat.

Sex, in the most satisfactory form familiar to the average U. S. male . . .

CLARA BOW

Recently the irresponsibility she portrays so well in character and which is her dominant personal trait involved her in predicaments bad for her box office draw. Further naughtiness might chill a public intolerant of caprice in its idols, but Clara Bow's hold on the U. S. imagination is strong. Daughter of a day laborer in Brooklyn, New York, she first came to attention when a dollar photograph of her won first prize in a national beauty contest. Like her face, her stimulating figure is a synthesis of U. S. standards. Her pictures are brightly colored, quick-moving, and vapid, titled with a suggestion of daring seldom borne out by the context. Some critics have professed that with training she might become an actress; Paramount shrewdly seems to feel that she is most effective in the unpolished state—quintessence of a national type.

Romance, virginal innocence, as inspiration for tender parables of first love . . .

JANET GAYNOR

Her delicacy never has to be accentuated by more than nominal make-up as she is naturally frail and in her adolescence suffered from ill-health. In her best pictures she played with wonderful success romantic parts in which there was a strong coloring of character (*Four Devils*, *Christina*, *Lucky Star*). Since it was hard to find vehicles that fitted the formula, Fox launched her into librettos that put an emphasis on music and dancing, and though totally unproven in these activities, she increased her draw so definitely that Seymour Felix at the Fox lot ordered all other players under contract to the company to appear before him for inspection of their abilities as dancers. In spite of the success of *Sunny Side Up*, it is patent that she lacks the vitality indispensable to musical comedy, even of the most saccharine kind. Recognizing this, she quarrelled with Fox to the extent of quitting work until they promised her a greater proportion of dramatic rôles.

Aristocratic beauty, poise, and intelligence, functioning in backgrounds of the best society . . .

NORMA SHEARER

In her débutante year in Montreal she was pointed out as the girl with whom the Prince of Wales danced three times at a party given for him during one of his visits there. She went into show business because soon after the evening of her elevation as a royal dancing partner her family lost most of its money. Before sound was invented, her presence, good looks, and ability as an actress had made her an important star; with the added instrument of her cultivated and flexible voice, the impact of her personality and hence her value to Metro-Goldwyn-Mayer was vastly increased. After she had achieved her own success independently, she married Irving Thalberg, Metro-Goldwyn-Mayer executive. Because almost all the best drawing-room plays in the traditional line of English drama from Sheridan to Somerset Maugham are perfect vehicles for her, she is likely to remain one of the most important women in the contemporary cinema.

Womanhood, as revealed in the operation of character usually including but never dependent on some chosen angle of sex appeal . . .

RUTH CHATTERTON

She is the only actress recruited for the talkies from the legitimate stage who has

GRETA GARBO
(Romance)

M-G-M

(Metro-Goldwyn-Mayer)

ON THIS AND FOLLOWING pages certain outstanding talkie successes are grouped under the names of the producers with which they are associated.

JOAN CRAWFORD
(Our Blushing Bride)

Photos Courtesy Metro-Goldwyn-Mayer

WILLIAM HAINES
(Way Out West)

NORMA SHEARER
(Let Us Be Gay)

RAMON NOVARRO
(Call of the Flesh)

Photos Courtesy Fox Productions

CHARLES FARRELL
(High Society Blues)

FOX

FOX IS THE SIMPLE NAME for the biggest corporate aggregation in the cinema business. By controlling Loew's, it controls M-G-M and thus, although M-G-M is managed entirely separately from Fox, all the stars on this page are in one sense Fox stars.

JANET GAYNOR
(High Society Blues)

WARNER BROTHERS FIRST NATIONAL

GEORGE ARLISS
(*Old English*)

Photos Courtesy Warner Bros.

CONRAD NAGEL
(*The Sacred Flame*)

RADIO PICTURES

Photos Courtesy Radio Pictures

RICHARD DIX
(*Shooting Straight*)

JOHN BARRYMORE
(*Moby Dick*)

LILA LEE
(*The Unholy Three*)

BETTY COMPSON
(*Inside the Lines*)

won a place in the cinema's top flight. She justified Emil Jannings' early recognition of her genius by acquiring a huge public almost overnight. Although she lacks the conventional beauty always heretofore considered necessary for a picture actress playing straight rôles, she created some of the first authentic dramatic hits of talking pictures (*The Doctor's Secret, Madame X*). With experience, she has learned the tricks of posture and facial angle that stars use to make the camera kind to them, so that in her later productions she has even appeared to have the beauty she was thought to lack before. The talkies' most consummately skilled emotional actress, her name means capacity at almost any theatre.

Extreme modernity, the daring youth of a generation given to experiments in conviviality . . .

JOAN CRAWFORD

She was merely one of Hollywood's many pretty and promising new stars until a moment in *Our Dancing Daughters* when, surrounded by extras in tuxedos and evening gowns standing in a circle on a ballroom floor, she propelled her notably shapely person through a solo dance that made the picture famous, that seemed the culmination of its mood and of the mood of many similar pictures. Although she is not particularly effective vocally, the allure of her figure and animation will undoubtedly keep her place safe as interpretress of those typically cinematic, "party" stories that have become her vogue.

Gayety, combined with a romantic appeal made enormously more effective, and sometimes actually created, by an atmosphere in which nothing is to be taken seriously . . .

MARION DAVIES

Her imitations of film celebrities, improvised at parties in Beverly Hills, had given her a private reputation as the screen's cleverest *comédienne* long before she had proved it in front of the camera. Adding vocal possibilities to her talents as a mimic, the talkies opened a new variety of stunts for her and proportionately increased her popularity (see Florodora picture on page 37).

• • •

Besides these top flight stars, there are numerous other actresses whose names in lights are a fair guarantee of acceptable entertainment. These can be included in two groups: (1) veterans of silent pictures who are earning big salaries today for their unimpaired ability to turn out good program features: Bebe Daniels (RKO), Lila Lee (Warner Brothers), Betty Compson (RKO), Dolores Del Rio (United Artists), and Billie Dove (First National); (2) young stars or featured players coming into fame, but still not yet secure enough in success to be appraised at their true worth to the industry: Claudette Colbert (Paramount), Kay Johnson (Metro-Goldwyn-Mayer), Leila Hyams (Metro-Goldwyn-Mayer), Constance Bennett (Warner Brothers), Alice White (First National), Nancy Carroll (Paramount), Helen Twelvetrees (Pathé), Kay Francis (Paramount).

THE MALE

Can be defined in the same terms.

As market factors, the relative appeal of the outstanding males may be tabulated in terms roughly corresponding to those that define their female competitors.

Chivalry, cultivated, and suave but implying an infinite capacity for ardor . . .

RONALD COLMAN

Undoubtedly the most important male star in pictures, he has built his extraordinary prestige with apparently very ordinary equipment. Handsome, but less striking than many screen men, slender, poised, restrained, he is a polished histrionic workman. Critics called his *Bulldog Drummond* the finest crook picture ever made; it was also the finest piece of directorial craftsmanship the talkies had produced up to the time of its release. His personal opinions on general cinema theory as applied to management and the future of the industry are shrewder and more definite than those of any other actor except Douglas Fairbanks Sr. Like Garbo, he participates little in Hollywood life except among the British clique; he is regarded as opinionated, cocksure, and slightly peculiar. His future looms as a more important factor for United Artists than the brilliant past of such celebrated co-workers as Mary Pickford, Douglas Fairbanks, Lillian Gish, Gloria Swanson, Norma Talmadge, and Charles Chaplin.

Charm, strictly cosmopolitan . . .

MAURICE CHEVALIER

With an unprecedented sunburst of publicity, Paramount surmounted the difficult task of making the U. S. curious about a name which, before *Innocents of Paris*, was totally unknown except to the non-picture-going cosmopolites who had heard him sing in Paris cabarets. In *The Love Parade*, he was starred in a kind of entertainment entirely new and properly indigenous to the talking cinema—part musical comedy, part sophisticated romance, against superb photographic backgrounds. A slightly less successful variation of this formula was repeated in his last release, *The Big Pond*. Since no vehicle will be satisfactory for him that makes it necessary to assume any character other than his own, he is now, and will doubtless remain, the cinema's outstanding revue headliner.

[*Continued on page 122*]

PARAMOUNT

RUTH CHATTERTON
(*Anybody's Woman*)

MAURICE CHEVALIER
(*The Big Pond*)

WALTER HUSTON
(*Lincoln*)

JACK OAKIE
(*Let's Go Native*)

Photos Courtesy Paramount Pictures
GEORGE BANCROFT
(*Ladies Love Brutes*)

CLAUDETTE COLBERT
(*Manslaughter*)

The World's Biggest Drug Chain

Is only one stone in the brilliantly planned structure of Drug, Inc. Herein is told how a share of Drug, Inc. common came to give its owner better service than he had formerly enjoyed.

DRUG, INC. owns the largest chain drug store system in the world, and every one of you has at one time or another walked into one of its stores. Drug, Inc., being exclusively a holding company, does not advertise, but of the companies it holds you have heard of Life Savers, Inc., the Bayer Co. (aspirin), the Vick Chemical Co. (VapoRub), Bristol-Myers Co. (Ipana, Sal Hepatica). Of drug stores which it includes, you have heard of Rexall stores and Liggett stores, Owl stores on the Pacific Coast and Boots stores in England. You may not know that, on August 1, 1930, conservative Kidder, Peabody & Co. estimated that its current earnings were running at a rate in excess of $6.00 a share per annum and its sales at $160,000,000, a figure which is probably low. (Its net for the first six months of this year was $10,542,007, up $3,000,000 from the same period last year.)

Drug, Inc. is a money-maker now, it is far from through with its expansion program, and it is a good company to watch. It is also a good company to understand, because it straddles a number of fields at once, is as important a manufacturer as it is a retailer, as important a retailer as it is a distributor, and never confuses the three functions. Thus, when it bought the May Drug Co.'s eighteen Pittsburgh stores in December, 1928, it was following quite another tack than when it bought Life Savers, Inc. just one month later. And in the difference lies the key to the development of Drug, Inc. since it officially came into being on March 2, 1928.

A glance at the chart on the opposite page reveals the fact that from the corporate body of Drug, Inc. there extend two arms, quite properly terminating in two hands, each of which has many fingers. Now it would be straining the metaphor to say that Drug, Inc. does not let its right hand know what its left hand is doing, but it is true that Drug, Inc. is distinctly ambidextrous and that one hand is as important as the other. So far as the body itself is concerned, it contents itself with taking in the financial nourishment gathered by each of its busy hands, seeing to it that they gather more together than they could separately, and distributing the proceeds to the 22,000 stockholders whose corporate creature it is.

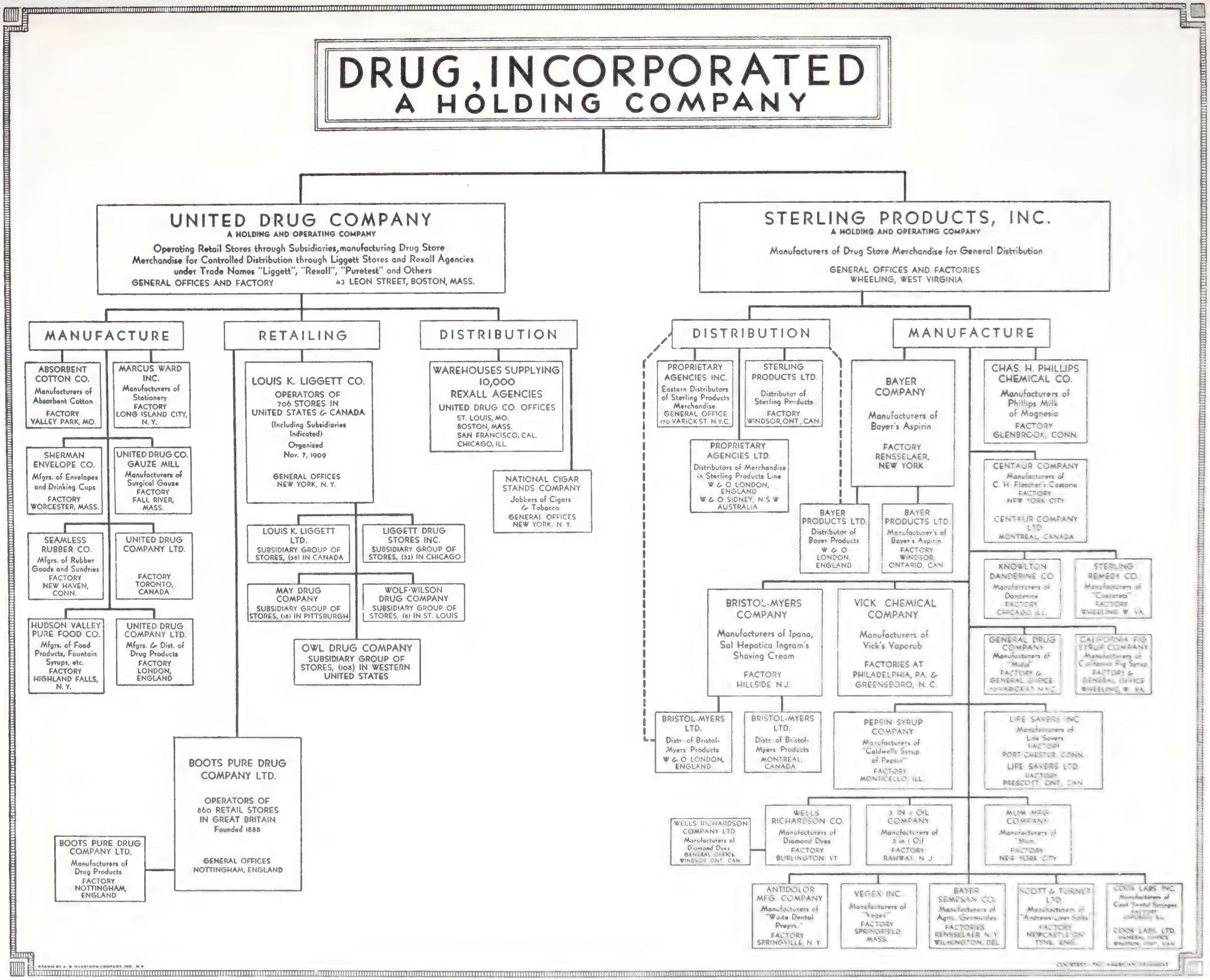
Left hand—United Drug

The United Drug Co. was originally a red building in a street called Leon in Boston. Candy was made in the basement and on the top floor, and sandwiched in between the candy-making floors were three floors devoted to drugs and a few executive offices. Forty druggists, including Mr. Louis K. Liggett of Boston, each put up $4,000 to form it, and they didn't quite know what was going to happen to it or to their money. In fact, several of them could not even find Leon Street, and Mr. Liggett issued to each of them a printed direction slip saying that the best way to find the factory was to get off at Back Bay Station, walk to a corner, grab a cow by the tail, let her lead you to the city limits, and then somebody would probably show you the way. It was all very silly and gay-making, and it was in 1902 and it might never have succeeded and Mr. Liggett might never have had a yacht. But it did succeed, and it is now the 10,000 Rexall stores, the 706 Liggett stores, the 860 Boots stores, and the many factories of United Drug and its subsidiaries. And it is as shrewd a system of distributing and retailing as that of the Great Atlantic & Pacific Tea Co. The early history of the company, its modest beginning, and gradual acquisition are interesting but usual. You may take it for granted that United Drug was once a little red building and that it had a tough time at first. It is of more moment to tell you what it is than what it was.

Of more moment, that is, except for one thing. That is an idea which is past history because it occurred in 1901, but is current history because it operates today. In 1900, Mr. Liggett, not very successfully, was selling drugs and medicines in what salesmen call the Boston area. He saw about him many patent medicines, each popular in its own little district. Why not, asked Mr. Liggett, pool all these special formulas, invest in a central manufacturing business (the original building in Leon Street), and thus allow each druggist to have a wider line of popular medicines? Each druggist would be the exclusive retailer of the jointly manufactured products in his own district. Upon this idea was built United Drug, now one of the two hands of the great Drug, Inc. The little manufacturing business in Leon Street is now the large manufacturing business in Leon Street and factories of subsidiaries from London to Valley Park, Missouri. The forty original Rexall (king of them all) agents have swollen to 10,000, managing 10,000 Rexall stores, and there has developed a branch of United Drug which was not foreseen in 1902. The Liggett chain began with the purchase of a Rexall store upon the death or retirement of the agent. Now it includes 706 stores, almost entirely in the large cities.

The relationships between these three major parts of United Drug (the factories, the Liggett chain, and the Rexall agents) are important to an understanding of Drug, Inc. and the difference between the purchase of the May stores and of Life Savers. United Drug, in 1927, made some 9,000 separate items of merchandise, many of them branded with the trade names of Rexall, Puretest, Liggett, etc. These included tooth pastes, some five different kinds of mouth wash, candy, shaving soaps and creams, aspirin, laxatives, bicarbonate of soda—all the staples of a drug store as well as bathing caps, hot water bottles, and the various paraphernalia of the new drug store era. They were available to the Liggett chain and the Rexall agents only, and they automatically provided these retailers with a line of highest quality merchandise on which no competition could undersell because no competitor possessed them. For both the chain and the agents, the exclusive agreement was ideal. As ruinous price-cutting (of which more later) became universal, the Liggett and Rexall managers could rely upon their renewal trade in United Drug products at a maintained price. Some small town Rexall agents bought as much as 40 per cent of their entire merchandise requirements from United Drug; the average of both Liggett and Rexall chains itself was nearly 20 per cent. The plan was as successful when United Drug was a huge company with a $7,000,000 profit as it had been in the early Leon Street days.

And from the manufacturing end, the exclusive agreements had many merits. There were provided some 11,000 assured outlets. A relatively small sales staff (about 100) would bring selling costs down to the extremely low figure of 4.7 per cent of the sales price. There was also an advantage in being able to gauge the demand so exactly, particularly in a company where 9,000 products had to be kept in balance and evenly distributed over the year. But from one important point of view, the exclusive agreement applied a definite brake to United Drug progress. So long as the agreement remained in force, it was out of the question


DRUG, INCORPORATED
A HOLDING COMPANY
UNITED DRUG COMPANY
A HOLDING AND OPERATING COMPANY
Operating Retail Stores through Subsidiaries, manufacturing Drug Store Merchandise for Controlled Distribution through Liggett Stores and Rexall Agencies under Trade Names "Liggett", "Rexall", "Puretest" and Others
GENERAL OFFICES AND FACTORY 43 LEON STREET, BOSTON, MASS.
MANUFACTURE
ABSORBENT COTTON CO. Manufacturers of Absorbent Cotton FACTORY VALLEY PARK, MO.
MARCUS WARD INC. Manufacturers of Stationery FACTORY LONG ISLAND CITY, N. Y.
SHERMAN ENVELOPE CO. Mfgrs. of Envelopes and Drinking Cups FACTORY WORCESTER, MASS.
UNITED DRUG CO. GAUZE MILL Manufacturers of Surgical Gauze FACTORY FALL RIVER, MASS.
SEAMLESS RUBBER CO. Mfgrs. of Rubber Goods and Sundries FACTORY NEW HAVEN, CONN.
UNITED DRUG COMPANY LTD. FACTORY TORONTO, CANADA
HUDSON VALLEY PURE FOOD CO. Mfgrs. of Food Products, Fountain Syrups, etc. FACTORY HIGHLAND FALLS, N. Y.
UNITED DRUG COMPANY LTD. Mfgrs. & Dist. of Drug Products FACTORY LONDON, ENGLAND
RETAILING
LOUIS K. LIGGETT CO. OPERATORS OF 706 STORES IN UNITED STATES & CANADA (Including Subsidiaries Indicated) Organized Nov. 7, 1909 GENERAL OFFICES NEW YORK, N. Y.
LOUIS K. LIGGETT LTD. SUBSIDIARY GROUP OF STORES, (36) IN CANADA
LIGGETT DRUG STORES INC. SUBSIDIARY GROUP OF STORES, (32) IN CHICAGO
MAY DRUG COMPANY SUBSIDIARY GROUP OF STORES, (18) IN PITTSBURGH
WOLF-WILSON DRUG COMPANY SUBSIDIARY GROUP OF STORES, (6) IN ST. LOUIS
OWL DRUG COMPANY SUBSIDIARY GROUP OF STORES, (108) IN WESTERN UNITED STATES
BOOTS PURE DRUG COMPANY LTD. OPERATORS OF 860 RETAIL STORES IN GREAT BRITAIN Founded 1888 GENERAL OFFICES NOTTINGHAM, ENGLAND
BOOTS PURE DRUG COMPANY LTD. Manufacturers of Drug Products FACTORY NOTTINGHAM, ENGLAND
DISTRIBUTION
WAREHOUSES SUPPLYING 10,000 REXALL AGENCIES UNITED DRUG CO. OFFICES ST. LOUIS, MO. BOSTON, MASS. SAN FRANCISCO, CAL. CHICAGO, ILL.
NATIONAL CIGAR STANDS COMPANY Jobbers of Cigars & Tobacco GENERAL OFFICES NEW YORK, N. Y.
STERLING PRODUCTS, INC.
A HOLDING AND OPERATING COMPANY
Manufacturers of Drug Store Merchandise for General Distribution
GENERAL OFFICES AND FACTORIES WHEELING, WEST VIRGINIA
DISTRIBUTION
PROPRIETARY AGENCIES INC. Eastern Distributors of Sterling Products Merchandise GENERAL OFFICE 170 VARICK ST. N.Y.C.
STERLING PRODUCTS LTD. Distributor of Sterling Products FACTORY WINDSOR, ONT., CAN.
PROPRIETARY AGENCIES LTD. Distributors of Merchandise in Sterling Products Line W & O LONDON, ENGLAND W & O SIDNEY, N S W AUSTRALIA
BAYER PRODUCTS LTD. Distributor of Bayer Products W & O LONDON, ENGLAND
MANUFACTURE
BAYER COMPANY Manufacturers of Bayer's Aspirin FACTORY RENSSELAER, NEW YORK
BAYER PRODUCTS LTD. Manufacturer's of Bayer's Aspirin FACTORY WINDSOR, ONTARIO, CAN
CHAS. H. PHILLIPS CHEMICAL CO. Manufacturers of Phillips Milk of Magnesia FACTORY GLENBROOK, CONN.
CENTAUR COMPANY Manufacturers of C. H. Fletcher's Castoria FACTORY NEW YORK CITY
CENTAUR COMPANY LTD MONTREAL, CANADA
KNOWLTON DANDERINE CO Manufacturers of Danderine FACTORY CHICAGO ILL.
STERLING REMEDY CO. Manufacturers of "Cascarets" FACTORY WHEELING W. VA.
BRISTOL-MYERS COMPANY Manufacturers of Ipana, Sal Hepatica Ingram's Shaving Cream FACTORY HILLSIDE N.J.
VICK CHEMICAL COMPANY Manufacturers of Vick's Vaporub FACTORIES AT PHILADELPHIA, PA. & GREENSBORO, N. C.
GENERAL DRUG COMPANY Manufacturers of "Midol" FACTORY & GENERAL OFFICE 170 VARICK ST. N.Y.C.
CALIFORNIA FIG SYRUP COMPANY Manufacturers of California Fig Syrup FACTORY & GENERAL OFFICE WHEELING W. VA.
BRISTOL-MYERS LTD. Distr. of Bristol-Myers Products W & O LONDON, ENGLAND
BRISTOL-MYERS LTD. Distr. of Bristol-Myers Products MONTREAL, CANADA
PEPSIN SYRUP COMPANY Manufacturers of "Caldwell's Syrup of Pepsin" FACTORY MONTICELLO ILL.
LIFE SAVERS INC Manufacturers of Life Savers FACTORY PORT CHESTER CONN
LIFE SAVERS LTD FACTORY PRESCOTT, ONT., CAN
WELLS RICHARDSON COMPANY LTD Manufacturers of Diamond Dyes GENERAL OFFICE WINDSOR ONT. CAN
WELLS RICHARDSON CO. Manufacturers of Diamond Dyes FACTORY BURLINGTON VT
3 IN 1 OIL COMPANY Manufacturers of 3 in 1 Oil FACTORY RAHWAY N. J.
MUM MFG COMPANY Manufacturers of "Mum" FACTORY NEW YORK CITY
ANTIDOLOR MFG COMPANY Manufacturers of "Waite Dental Preprs." FACTORY SPRINGVILLE, N. Y.
VEGEX INC Manufacturers of "Vegex" FACTORY SPRINGFIELD MASS.
BAYER SEMESAN CO. Manufacturers of Agric. Germicides FACTORIES RENSSELAER N. Y. WILMINGTON DEL
SCOTT & TURNER LTD Manufacturers of "Andrews Liver Salts" FACTORY NEWCASTLE-ON-TYNE, ENG.
COOK LABS INC Manufacturers of Cook Dental Syringes FACTORY CHICAGO ILL.
COOK LABS LTD GENERAL OFFICE WINDSOR ONT. CAN
DRAWN BY A. G. HAGSTROM COMPANY, INC. N.Y.
COURTESY THE AMERICAN DRUGGIST

for United Drug to buy any major nationally branded and advertised product. It would be patently absurd to confine the marketing of Life Savers or Castoria or Cascarets to the Liggett-Rexall systems. Expansion at the manufacturing head of the system was sharply limited, if not altogether stopped, by the very plan which had built it. This was the situation in which United Drug found itself at the end of 1927.

Right hand—Sterling Products

While United Drug was developing along its highly individual lines, another and quite dissimilar company was also making its impression on the drug trade. Sterling Products, Inc. began life in 1901, at about the time when Mr. Liggett was gathering his forty Rexall agents. The retail idea, which was so vital to the United Drug scheme of things, was never stressed by Sterling. In 1906, it took over the first of the long list of patented products which were to come under its management. After Danderine (1906) came Cascarets (1909), California Fig Syrup (1912), and, in 1919, the famous Bayer's Aspirin. As it absorbed each new company, it threw in such management as was needed (often Sterling retains the old management practically intact) and steadily increased the company's profits. In 1925 Sterling earned $4,903,000; in 1926, this mounted to $5,406,000; and in 1927, it jumped again to $6,197,000. United Drug in the same year suffered a slight setback from the peak year 1926 and showed $6,763,254 before preferred dividends. The two companies were at that point approximately equal in earning power, although United Drug's volume was immensely greater than Sterling's.

Just who was responsible for the idea of the merger is one of the points which is lost in the general Drug, Inc. enthusiasm. It was either Mr. George M. Gales of United Drug or Mr. A. H. Diebold of Sterling or both. The two men were friends and men of imagination, and they were forever tossing up conversational balloons. This one took the air and for excellent reasons.

Each company was impressed by the economies possible through a joint purchasing program. As sixty-five cents of Liggett Co.'s dollar still goes to the supplier, it is apparent that this was no mere talking point. If United Drug and Sterling today could cut even 1 per cent from their joint bills, Drug, Inc. would have another $1,000,000 available for dividends.

This was a major and compelling factor, appealing strongly to both Mr. Gales and Mr. Diebold. On the other hand, each man, each company, had strong individual reasons for favoring the merger. The Sterling firm, for example, spent large sums of money advertising and marketing its proprietary remedies; United Drug could offer about one-sixth of all the 60,000 drug stores in the U. S. as promotional aids. It was indirect promotion, to be sure, for it was obviously impossible to bring the Sterling products into the exclusive agreement. Yet the Liggett stores and the Rexall agents could be counted upon to give them something more than an even break in display and local advertising.

On United Drug's side, the merger offered a brilliant way out of its manufacturing *impasse*. While it could not *itself* buy Bristol-Myers (Ipana, Sal Hepatica, Ingram's Shaving Cream, etc.) and enjoy a $1,600,000 profit on $6,100,000 sales (a ratio of over 25 per cent), there was no reason why the new Drug, Inc. should not reap the large manufacturing profits which were automatically denied United Drug. Provided always that the United Drug system, including the exclusive agreement, remained intact.

There was, finally, the factor of security values. Drug, Inc., the result of the merger, would be not only much larger but would present a far more complete industrial picture than either United Drug or Sterling. It seemed reasonable to suppose the public would give its stock a higher value (in relation to earnings) than it would give to either a manufacturer or to a retailer and distributor whose manufactured products had a closed market. If this happened, Drug, Inc. could obviously continue both United Drug and Sterling expansions more cheaply than either could continue separately. To each company, in short, the merger seemed to open up an attractive future.

Underwood & Underwood

Mr. Louis K. Liggett was responsible for the Rexall idea.

Handshake

At the end of two and one-half years, neither Mr. Gales nor Mr. Diebold nor anyone else in Drug, Inc. sees any cause for regret. Some of their plans have turned out even better than they could have foreseen. After the break, for example, and through the early months of 1930, the assured Liggett-Rexall market was of the greatest value to the various Sterling companies, and such a product as Life Savers shows an actual 1930 gain. Expansion has of course been tremendous. In these two years, United Drug has absorbed three chains (134 stores), and Sterling has added close to a dozen brands known and sold throughout the U.S. Since the merger was effected, Drug, Inc. has used 156,500 shares to acquire retail businesses under United Drug management with estimated earnings of some $750,000 ($4.80 per share), while it has used 1,189,009 shares to acquire manufacturing earnings under Sterling management of some $8,500,000 ($7.25 per share). This disparity is largely due to the fact that in taking over the Owl chain with sales of nearly $20,000,000, Drug, Inc. was buying sales volume rather than earnings, since Owl's preferred dividends were not being covered in full at the time that it was taken over.

One more notable result of the merger can be seen in the diversification of income which alone makes a share of Drug, Inc. such a radically different investment from a share of the old United Drug or of Sterling. Before the merger, a large part of United Drug's $4,500,000 net for common came from its retail business and followed the general retail rule of an extremely low ratio to sales (the A. & P. ratio, for example, is about 2.5 per cent on the dollar). Sterling's situation with large manufacturing companies enjoying open markets was altogether opposite. Their combination in Drug, Inc. provided a most happy diversification. Of Drug, Inc.'s estimated $175,000,000 domestic sales of the companies now consolidated (1929), Sterling accounts for perhaps $45,000,000. But of Drug, Inc.'s probable $21,000,000 net for this year ($10,542,006.66 for the first six months), Sterling will contribute some $15,000,000 as against United Drug's $6,000,000 (based upon the last available earning statements and estimates of the respective companies prior to consolidation); and Sterling management has become responsible for dividends of $9,230,000 on 2,307,499 shares against United Drug's responsibility for $4,776,000 on 1,194,000 shares.

Management

However sound the economic urges toward the United Drug-Sterling merger may have

[*Continued on page 110*]

Drug, Inc.: *Sterling Products*

Clinical notes on some famous remedies.

IN PORT CHESTER, Connecticut, are made Life Savers in a factory that you can ee from the railroad tracks, and many a commuter to New York has cast an early morning ye at the three huge packs of Life Savers advertising the "Candy Mint With the Hole" on he lawn in front of the building. In Rahway, New Jersey, is the factory for Three-in-One Oil, first concocted by one J. Noah H. Slee, econd husband of Margaret (birth-control) Sanger, who is his second wife. It derives its name from the fact that it is actually three oils—animal, vegetable, and mineral.

• • •

The origin of most of the Sterling mediines is pretty much the same. These mediines were made by local doctors, prescribed or their patients. They began to grow in popularity; they became known; they were purchased by Sterling Products; they became nationally known. In Glenbrook, Connectiut, where one Dr. Phillips first made it and old it to his neighbors, is concocted the now amed Phillips Milk of Magnesia. California Syrup of Figs was first bottled by a man named Queen who lived in Reno, Nevada. There is Charles H. Fletcher's Castoria, a pleasant substitute for castor oil, marketed under the excellent but improbable slogan: "Children Cry for It." One Seraph Deal still njoys royalties from the sale of Mum. Last ear the company purchased the Bristol-Myers Co., manufacturers of Sal Hepatica, ngram's Shaving Cream, and Ipana Toothpaste. This year it purchased the Vick Chemcal Co. (VapoRub.)

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The effect of such companies as United Drug and Sterling upon patent medicines has been, according to the American Medical Association, which is always very doleful upon the subject, to "help toward making patent medicine advertising a little more decent and conservative." With some acidity, he A. M. A.'s Bureau of Investigation concludes that "most of these coöperative concerns make at least a pretense of giving some nformation regarding the composition of heir products."

All the United Drug and Sterling labels, however, are acceptable under the restricions of the Federal Food and Drug Act. In he history of United Drug, the A. M. A has record of only one product which was declared misbranded. This was a Rexall Headache Wafer marketed around 1910 and declared harmless, although it contained acetphenetidin, a harmful drug. Acetphenetidin is one of the few drugs that the Food and Drug Act requires to be declared as to presence and quantity in patent medicines. The highly ethical and strict A. M. A. could not, of course, approve of any company which markets a patent medicine. But as far as this phase of its business is concerned, Drug, Inc. receives from the A. M. A. as much approval as it could possibly obtain.

Sterling Products, Inc. is itself successor to Sterling Remedies, started in 1887 by one H. L. Kramer of Attica, Indiana. Mr. Kramer in his day was a violent anti-nicotinist and developed a product called No-Tobac. In the spirit of the well-known Keeley cure, No-Tobac tasted so awful that you were supposed never to want to smoke again. The trouble was that No-Tobac was constipating. It rid you of a habit but, with something akin to poetic justice, it created an unpleasant condition. So Mr. Kramer ingeniously developed a laxative pill made of cascara sagrada to be taken after No-Tobac. His trade name was Cascarets. The Cascarets, not the No-Tobac, made the fortune. A moral may probably be drawn.

• • •

Most widely sold drug in the U. S. is aspirin. In Rensselaer, New York, a rather disagreeable town, is the Bayer Co., manufacturers of Bayer's Aspirin, most widely sold and advertised aspirin in the world. The Bayer Co. was originally owned by the I. G. Farbenindustrie, but was seized by the U. S. Alien Property Custodian (at that time the vigorous, brilliant Germanophobe, Mr. Francis P. Garvan) at the beginning of the War. Sterling bought the company from the government in 1919.

• • •

Not listed on the *American Druggist* chart, although they are Sterling companies, are the Winthrop Chemical Company and the Metz Laboratories. They are engaged chiefly in medicinal research and produce no patent medicines. They are the aristocrats of the group. They were omitted because the A. M. A. frowns dourly on the advertisement —direct or indirect—of ethical preparations. The two companies produce nothing which the A. M. A. does not approve though there was once a slight argument about the labeling of a certain product with a trade name.

The Metz Laboratories operate on a smaller scale as do the pharmaceutical laboratories of Squibb or Parke, Davis. They work out new formulas or improve old ones. They are proudest of their discovery of spinocain—an anæsthetic for major operations. It is put into the spinal fluid and causes temporary paralysis of the lower half of the body. It is used on patients whose hearts might not be able to stand ether, and its after effects are less annoying.

The Winthrop Chemical Company is allied with Germany's vast and important chemical company, I. G. Farbenindustrie. It manufactures I. G. pharmaceuticals under a perpetual contract to give I. G. a percentage of the profits.

• • •

Significant among I. G. products are chaulmestral, the leprosy medicine, and luminal, only known specific for epilepsy. Recently developed is an anæsthetic called avertin, rapidly growing in popularity among advanced hospitals. It enables the patient to sleep for some time before the operation and for several hours after it. Its after effects are practically negligible. Vigantol is an I. G. specific for rickets. It was developed by Dr. Windaus, winner of the 1928 Nobel price for chemistry, who at the request of I. G. went to Norway to discover what in cod liver oil made it healthy. He studied the cod's food and found no clue, at length studied the light as it filtered through the water to the cod. He succeeded in isolating Vitamin D. And cod liver oil is properly called bottled sunshine. Vigantol, which is isolated Vitamin D, will cure any case of rickets.

In the whole history of medicine only a very few absolute specifics have been found. One is quinine for malaria; another, I. G.

[*Continued on page 112*]

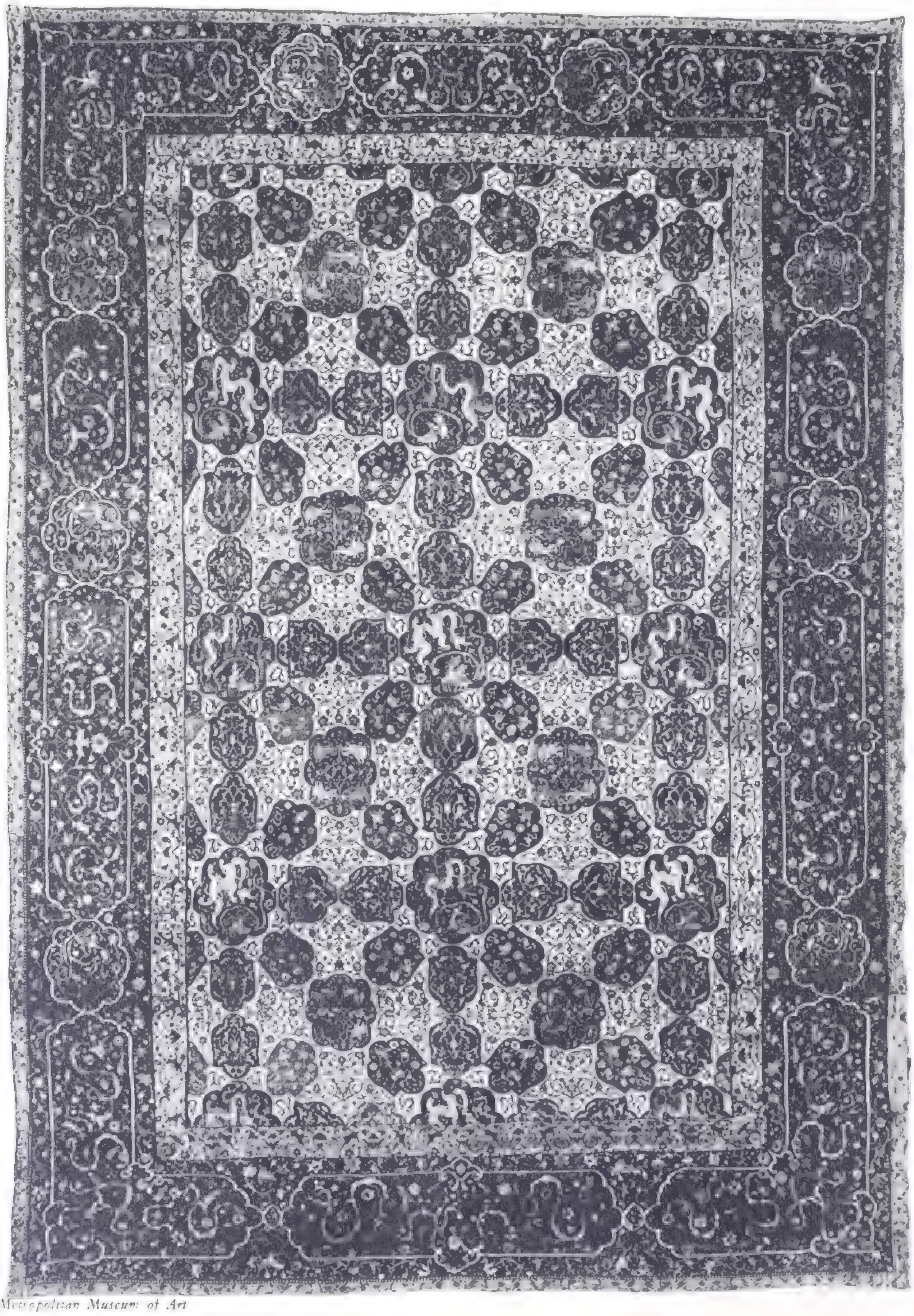
© Keystone

After 605 trials and errors, Paul Ehrlich discovered salvarsan.

Maksoud of Kashan and Mrs. McCormick of Chicago

Great carpets and great collectors: the painted, well-nigh priceless wool of Persia.

THERE are four good reasons why collectors don't collect hens' eggs. The first is that their intrinsic value is not great. Eight or ten cents at the outside. You can't seriously collect something you can replace on the open market for eight or ten cents. The second is that the beauty of a hen's egg tends to repeat itself. It becomes monotonous. In a way, when you have seen one hen's egg you have seen all the hens' eggs there are. People simply won't go on down the gallery to look at the rest. The third reason is that you have no assurance of rarity. Even though Mr. Raskob, for example, were to make the most complete and comprehensive collection of hens' eggs ever seen on this earth and were to destroy all the residue, he could have no confidence that the world's hens would not lay his treasures into complete obscurity the next morning. And finally there is no lore of the hen's egg. You cannot be erudite and scholarly and profound about the difference between a "Nineteenth century black Minorca: northeastern U. S.—excellent state of preservation" and a "Contemporary buff cochin: origin unknown: slight abrasion in upper right-hand corner: Mulrooney collection." You can't talk about the Evanston Egg the way one would talk about the Ardebil carpet.

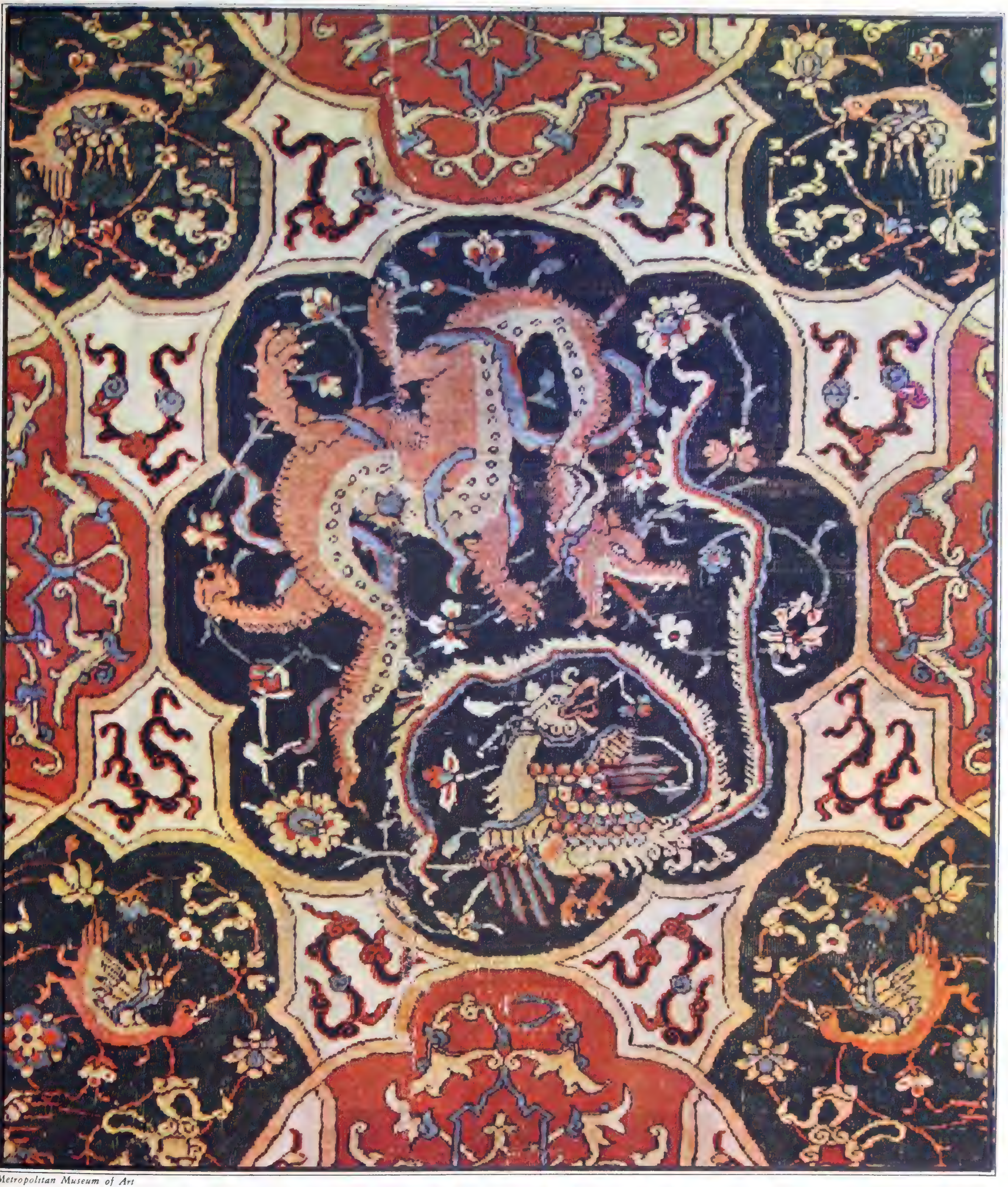


Metropolitan Museum of Art

There are also four good reasons why collectors do collect antique Persian rugs. And they are the same—with opposite effects. Persian rugs are not only collectors' objects: they are the greatest of all collectors' objects. They provide the amateur with every possible thrill. Their value is very high: somewhere between the square foot price of New York real estate and the square foot price of the *Blue Boy*. They are extremely beautiful and the archaistic, formal quality of the design of the oldest pieces is peculiarly appealing to our generation. They are, as a class, the rarest of all seriously collectible works of great art. There are subdivisions of ancient work, instances of which are, of course, harder to pick up. But there is no other case where the major artistic production of a great nation is at once so well known and so hard to find. And as for the lore of the Persian rug—there is a body of erudition into which the specialist can disappear from the vulgar eye like a porpoise plumping into a bed of kelp. There never was so deep a sea of learning.

The Golden Fleece

Value in the art business is an uncertain thing. Unless someone, for reasons which may or may not be esthetic, desires to buy the *Blue Boy*, the *Blue Boy* is merely a somewhat insipid picture by a not altogether first-rate painter. But if someone does desire to buy the *Blue Boy* badly enough, the *Blue Boy* becomes the most valuable picture in the world. The same thing is even more true of rugs, because the market for rugs is smaller. There is only a handful of people who buy rugs—great rugs. If the handful isn't interested, there is no market, and if there is no market there is no price.



Metropolitan Museum of Art

EARLY 16th CENTURY MEDALLION CARPET FROM NORTH-WEST PERSIA.—This is one of the great rugs of the world. Only two or three carpets of this type are known to exist: one in the Metropolitan Museum in New York. Bought in 1910 for less than $20,000, the Metropolitan could conservatively estimate the present value of this piece at from five to ten times that sum. [*Complete design on page 46.*]

Metropolitan Museum of Art

But in spite of that fact, rug dealers have attempted to state general prices for the painted wool. One expert recently gave it as his opinion that woolen antique rugs of the great era were worth about $500 a square foot (land at No. 1 Wall Street has sold at over $700). Another, an Englishman, has attempted to value the carpet from the Mosque of Ardebil, now in the Royal Victoria & Albert Museum in London, the greatest of all carpets, in the following way:

A new rug of this area with this number of knots to the square inch would cost about £1,585. And the value of a rug doubles every century. And this carpet is four centuries old. Hence its value, according to the rule, should be £25,360. But the excellence of this particular rug is such that we might as well double its value again. Result: £50,720.

There are two all too obvious vices in the method. The first is that Maksoud of Kashan, who made and signed the rug in 1540, has been dead for some time and there is no comparable modern work at any price. The second is that there is no way of telling what Edith Rockefeller McCormick or Mr. Mackay or Mr. Morgan would give for the Ardebil carpet if it were put up for sale.

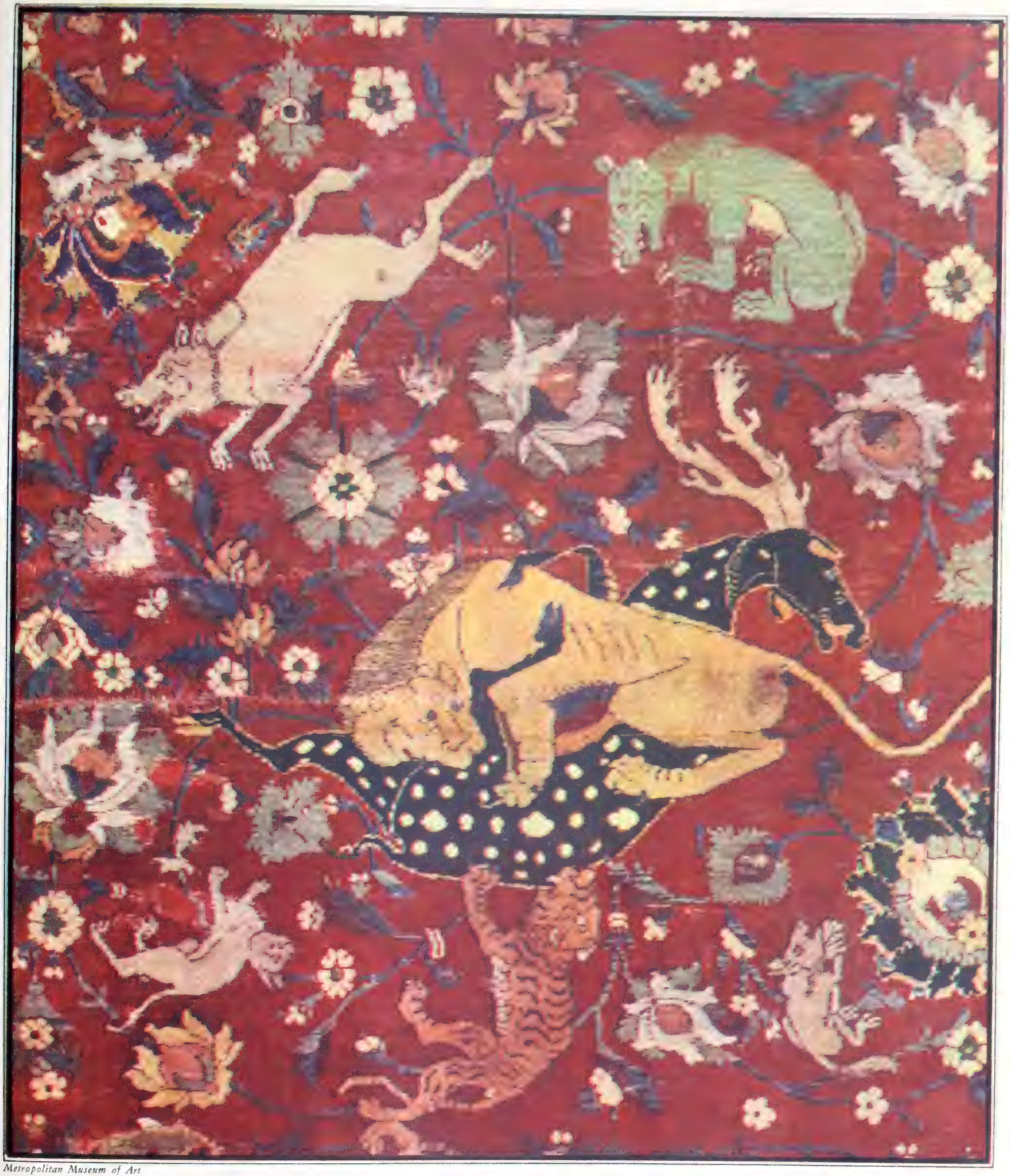
It is wiser to compute value from prices actually paid or actually offered and refused. The excellent collection of Charles T. Yerkes was offered for sale in 1910. The prices obtained as contrasted with the prices paid by Mr. Yerkes were as follows:

	Cost to Mr. Yerkes	*Sale Price*
Persian 16th century	$15,000	$ 9,500
"Polish" (Persian) 16th century	12,500	12,300
Ardebil silk	15,000	35,500
Old Persian Ardebil	15,000	15,200
Northwest Persia, early 16th century	30,000	19,600
Persian State, 16th century	30,000	33,000
Ardebil wool	30,000	27,000

These prices were considered low at the time. The fifth rug in the list, which was purchased by the Metropolitan Museum, is now valued by dealers at anywhere from five to ten times the price it brought in 1910.

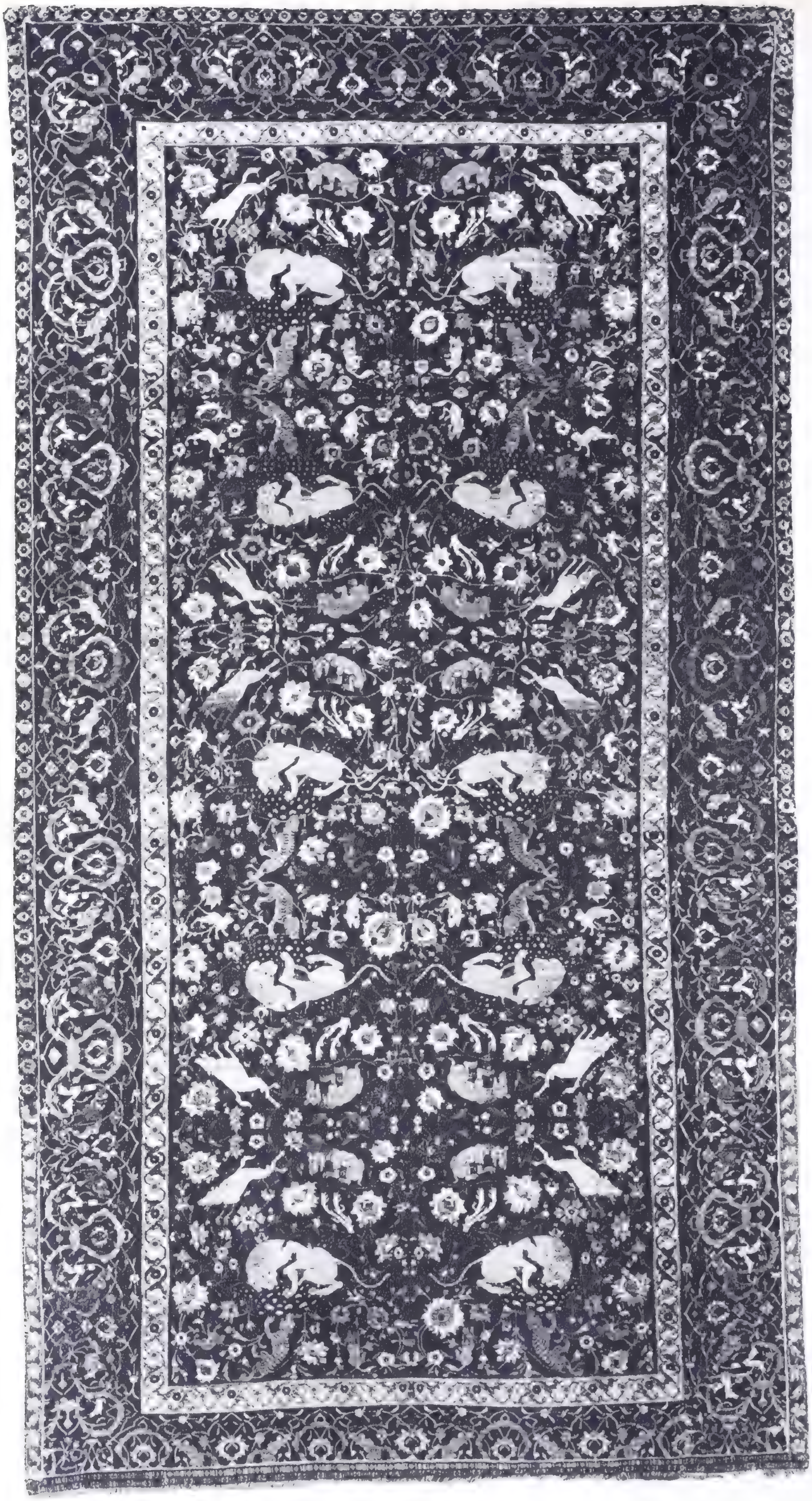
Another advance in price authenticated by actual offer and sale is that of a royal Persian animal rug of the 15th or early 16th century, originally a gift from the Shah to the Sultan. It was bought by Benguiat Brothers at the sale of the Marquand Collection in 1903 at a price of $38,000. J. P. Morgan immediately offered $50,000, which offer was refused. And in 1926 the rug was bought by Parish-Watson, a dealer, for $100,000. It is eleven feet, ten inches, by six feet. A much larger rug picked up in a fragmentary state in Spain by Kelekian, a dealer, and sold to Elbert H. Gary went, at the Gary sale in 1928, for $106,000, the purchaser being an agent for John D. Rockefeller Jr. And Mr. Gary himself offered James Deering of Chicago $125,000 for an Ispahan now in the Chicago Art Institute which Mr. Deering had bought before the War for $58,000 and which Mr. Gary had refused at that price. The offer was not accepted.

But it is as possible for a dealer to overreach himself as it is for a customer to err. A very famous early animal carpet from the former collection of the Emperor of Austria described by the American rug expert, Arthur Upham Pope, as one of the greatest achievements of early decorative art, fell recently into the hands of a certain Behar, a London dealer in Persian rugs, who is said to have paid £16,000 for it. Mr. Behar wished to exhibit his purchase to the American market, but to avoid the payment of duty which, on rugs, was then 55 per cent. He therefore consigned his carpet to the Metropolitan Museum for public exhibition. The excellence of the carpet was such that



Metropolitan Museum of Art

ANIMAL RUG, 16th CENTURY, NORTHWEST PERSIA.—This is one of the best examples of a famous category of carpets. It comes from the royal mausoleum of Shah Ismael at Ardebil and probably dates from the third decade of the century. The rug magnificently combines simplicity of color with intricacy of design, and the drawing is of the first order. [*Complete design on page 50.*]



Metropolitan Museum of Art

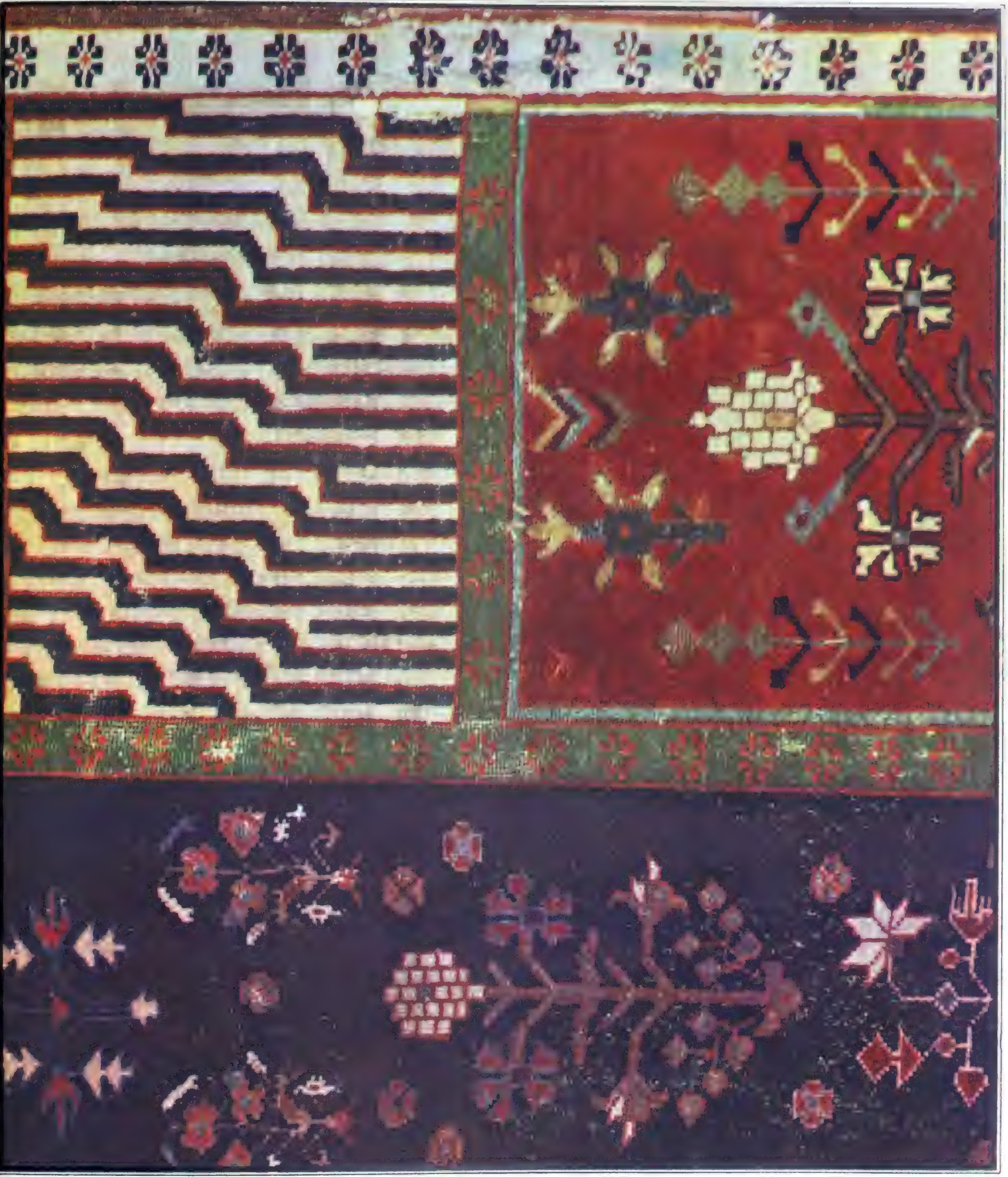
the Metropolitan Museum was glad to show it, and Mr. Behar did the rest. He allowed it to be whispered about that $500,000 would purchase the piece. When his whisper brought no response, he allowed it to be said out loud. And when there was still no interest, he began saying it out loud himself. The upshot was that the Metropolitan Museum demanded the return of the piece abroad. And when it was finally put up at auction at Christie's in London it went to Mrs. McCormick for £22,000.

Dyeing the lily

As to the beauty of the great Persian rugs, a great many books have been written in which the eye of the public has been variously invited to their color, their design, their symbolism, their artisanship, and the blood of the harem beauties darkening their threads. All such invitations to ecstasy in this or any other field of art are futile. No man who does not admire what he sees himself will honestly admire what his betters tell him he ought to see. The most the subtlest writer on such themes can do is to work his own enthusiasm into his description of the object and impart a kind of contagious eagerness to the run of his words. But the rug itself remains its own only description. Even paragraphs evocative of the land which produced these wonders are vain—the golden dome of Kum across the shallow river, or Ispahan, the ruined rose trees and the jackals in the doors. The rugs of Kashan have as little to do with the romantic travelogue writers of our time as the Navajo desert with a movie cowboy. Their great quality is their quality of design. And their design is hard, clear, pure, compressed. They are never naturalistic. No rug of the great centuries of Persian rug making was ever naturalistic. Shapes from the natural world and colors from the natural world were used. But they were first subjected to the requirements of the artist's design; they were "conventionalized." And the difficulty of the medium, the length of time required to make a good rug, the movements of thumb and fingers in the weaving, made it impossible for the artist ever to become fluent, ever to become eloquent, ever to spread himself.

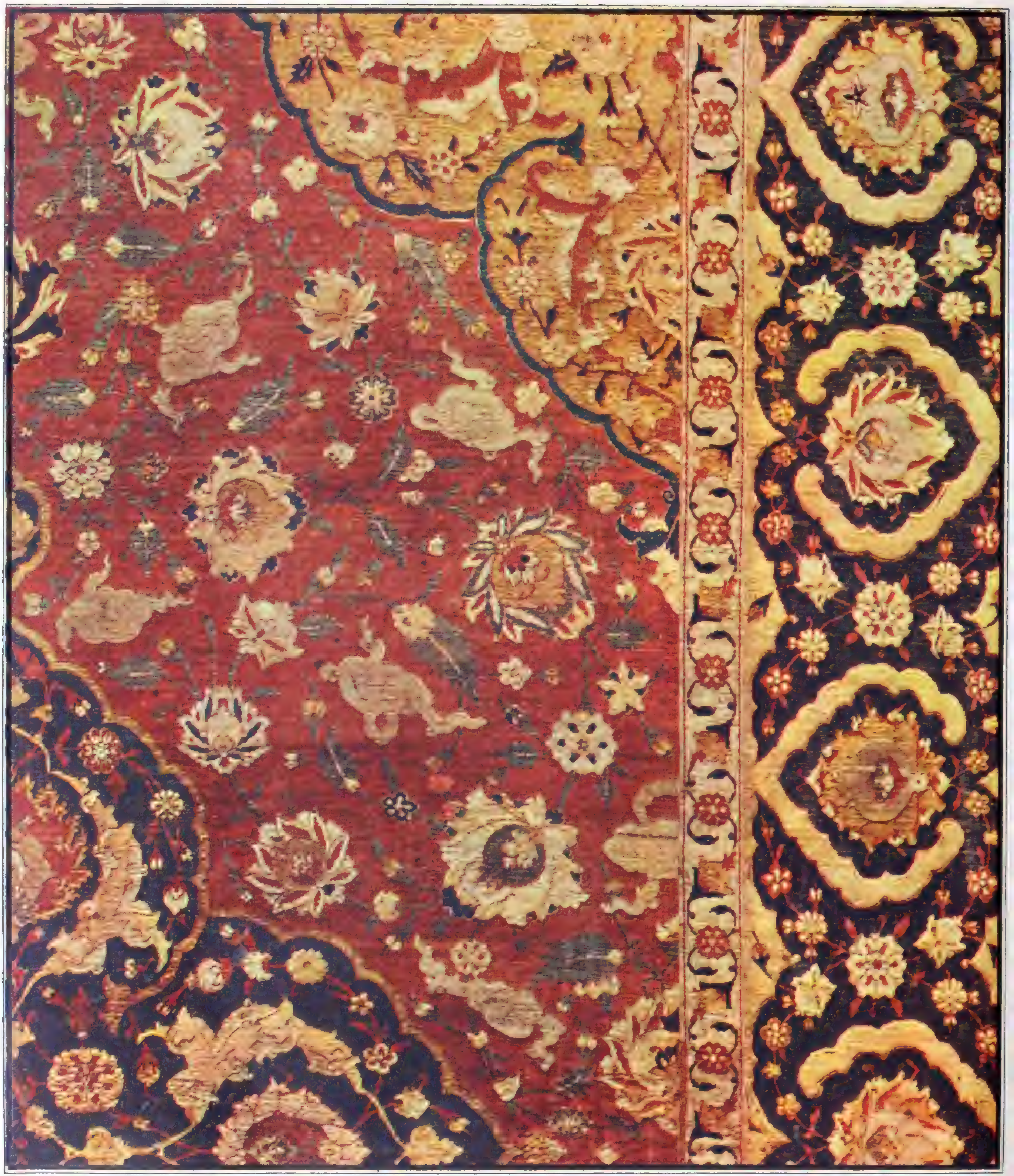
It is because we admire these qualities, because we like early Italian and German painting, because we prefer Bach to Wagner, that we appreciate great Persian rugs today. But that was not their earlier appeal. When they appeared, a few of them, as *tapis polonaise* in the Paris Exposition of 1878, and when they were first seen in quantity in the great Vienna Rug Exposition of 1891, it was their color and their vitality, in contrast with the Brussels carpets of European use, that carried them along. They were not at that time new to Europe. They had been sent by the "Great Sophies" of the 17th century as gifts, and there had been a thriving 17th and 18th century trade in such rugs as the Ispahans and the Polonaises. But they had been forgotten. And their rediscovery

[*Continued on page 100*]



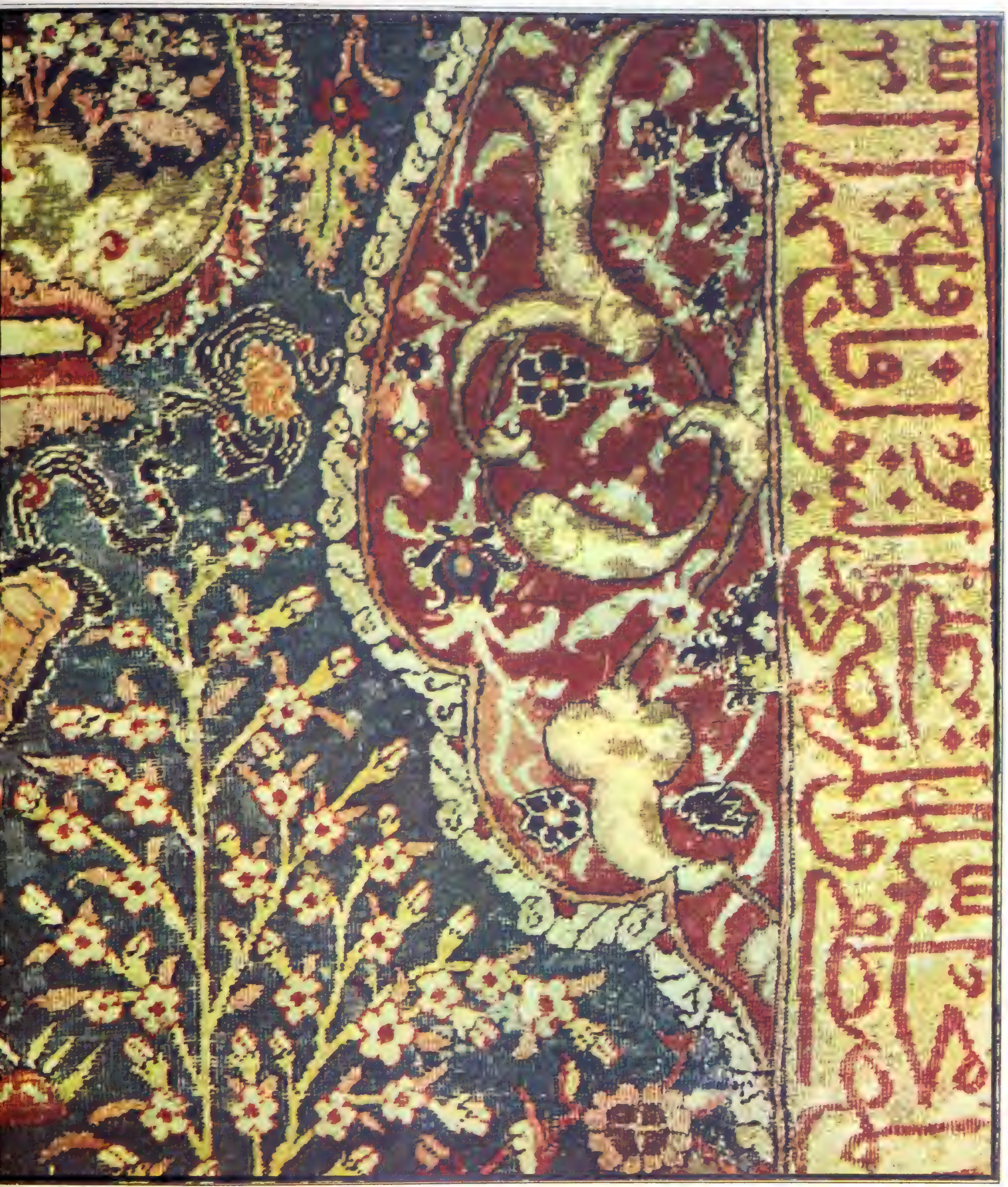
Metropolitan Museum of Art

EIGHTEENTH CENTURY GARDEN CARPET FROM NORTH-WEST PERSIA.—A descendant of the "Spring of Chosroes," the enormous garden carpet of silk and gold and precious stones and silver destroyed when the Arabs captured Ctesiphon in the 7th century. The garden paths, the water, and the roses are here shown. Such gardens, walled and overrun with rose trees, still exist in Persia. [*Complete design on page 48.*]



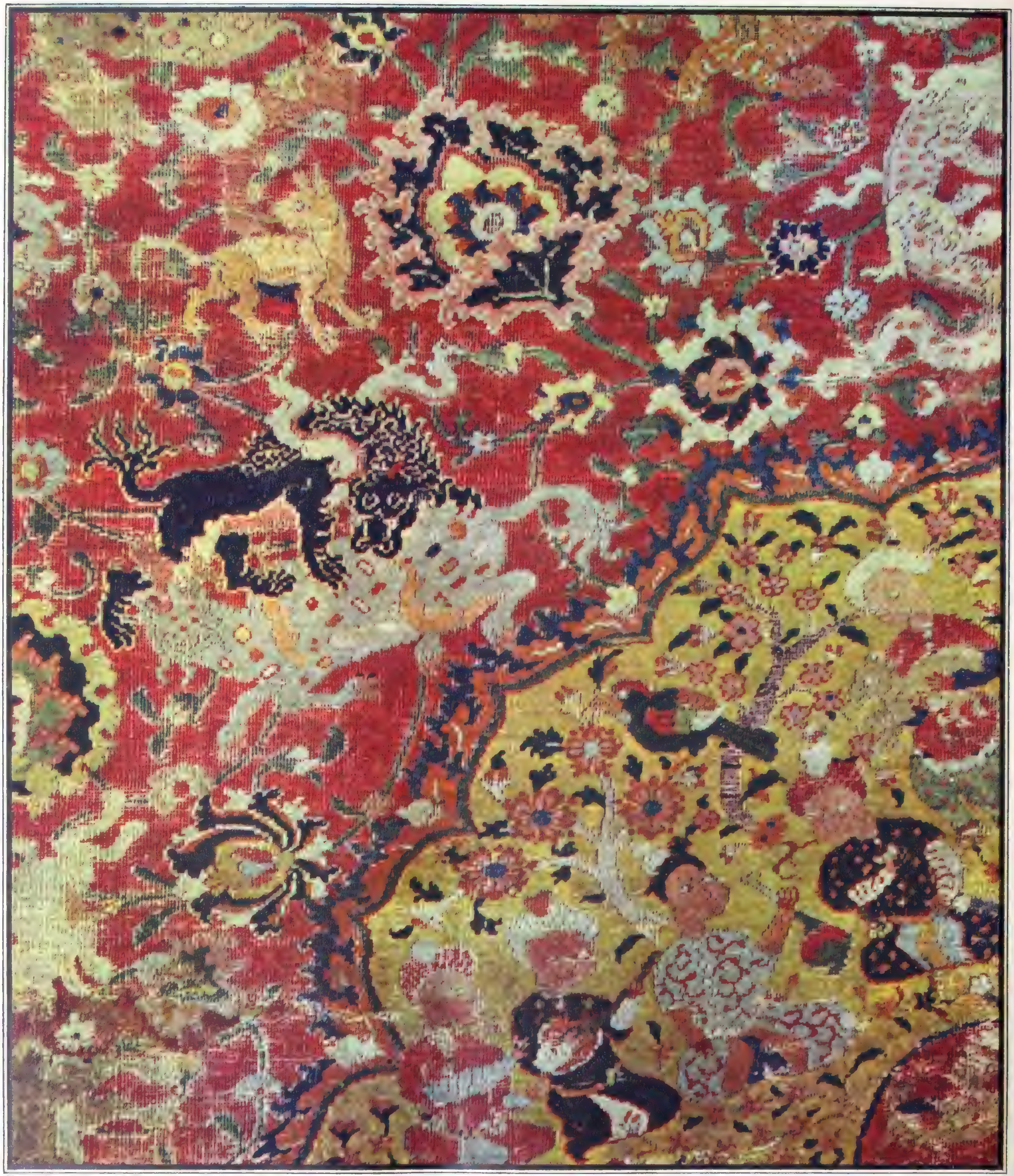
Metropolitan Museum of Art

LATE 16th CENTURY RUG FROM KASHAN.—Maksoud, weaver of the great carpet from the Mosque of Ardebil, was a native of Kashan which, in his time, was a great industrial city of Persia. Today its population is small, and its houses are so plagued by scorpions that few travelers venture to visit it. This rug, of silk, is one of the most beautiful in the Metropolitan Museum.



etropolitan Museum of Art

PRAYER RUG FROM NORTH PERSIA, ABOUT 1560.—These rugs re called in the East "Namazliks." The arch at the upper end signifies he mihrab in mosque. At the call for prayer the rug is so spread that the arch points toward Mecca. Few Mohammedans of Persia will sell prayer rugs to infidels, but in other Mohammedan countries such rugs are manufactured expressly for the Western trade.



Metropolitan Museum of Art

ANIMAL RUG, ABOUT 1600.—This is probably one of the last of the animal carpets woven in northwest Persia. It represents the stage of transition from the animal rugs of the 16th century to the elegant floral pieces of the 17th woven for the Court of Ispahan. Already in this rug, the animal forms are subordinate to the palmette. Shapes from the natural world, in the great centuries of rug making, were conventionalized.

Nitrogen: I—*The World in Its Place*

At a conference table in Berlin, delegates from three continents remap an ndustrial world. Into the causes, technique, and possible results of that remapping, FORTUNE here inquires.

IN OSTEND, in Paris, in Berlin, there gathered last summer a most distinguished company f men. They came from three continents, and their urpose was to adjust, in one important respect, the ctivities of the world. With their deliberations hrouded in secrecy, they met, adjourned to another ity, reconvened, adjourned yet again, gathered for he last time in a room overlooking Berlin's Unter en Linden, and at length achieved agreement and uccess. The world had been put in its place.

The subject of their deliberations, which exnded from early June into late August, was NITROGEN. That same nitrogen which is fourfths of the air we breathe, which in times of war harnessed to make the crack of a rifle or the exlosion of a bomb, which in times of peace fulfills s most useful function as fertilizer. There was epresented at Paris and Berlin, last summer, very early all that far-flung portion of the world whose usiness it is to put nitrogen to work. Those who mine it from the earth (there was Chile's able Pablo Ramirez), and those who suck it, all unilling, from the air (there was keen Dr. Herann Schmitz, speaking for the mighty I. G. Farbenindustrie; there was Lord Melchett, Engnd's foremost industrialist). There were the chnicians (head and shoulders above them stood F. A. Cappelen Smith) and the financiers (many a ble sped back to 120 Broadway, where sat in nference the four Brothers Guggenheim). Almost ey had assembled all the pieces which together ade the nitrate puzzle, and with great effort they fitted them into a new and compelling picture. Only one big piece was missing (where was Allied Chemical & Dye?); its absence would cause trouble later.

By all odds the most spectacular piece was labeled Cosach. Translated, the label meant the Chile Nitrate Company, and interpreted, it meant a stupendous effort to lift Chile out of industrial chaos. On May 23, the deputies of the Chilean Congress first pondered a Project of Law, designed "to concentrate in one superior organization the management of private enterprises" in the nitrate industry. Each deputy knew this to be the final stand of Chile's great natural nitrate monopoly against the blight of overproduction from within, the blight of synthetic competition from without. Each deputy knew that upon its success depended Chile's prosperity and the future of Chile's budget. Accordingly, Pablo Ramirez, former Chilean Minister of Finance, heard in Europe that the Project had passed amid almost thunderous acclaim. On the eve of the celebration of the first centenary of nitrate exportation, while visiting American professors were gravely accepting university degrees, Don Carlos Ibañes del Campo affixed his flowing signature to the law.

Then had Pablo Ramirez a trump. Then could he take a hand at the picture puzzle on even—perhaps better than even—terms with the others at Paris. For behind him was now the entire natural nitrate industry, compact, backed for dear life by the potent Guggenheims, ready either to shake hands or to hurl yet another glove in the face of the synthetic enemy. Dr. Hermann Schmitz, second in prestige only to the scientist Carl Bosch at the I. G. Farbenindustrie, could not ignore such a new force in the world. Nor could Lord Melchett and Britain's Imperial Chemical Industries. Nor the French Comptoir de l'Azote, nor the Italian Montecatini. Nor the coal and coke operators of Germany, whose ovens last year yielded them 150,000 tons of byproduct ammonia from which to make nitrogen. Glittering as had been the triumph of science over nature, yet nature was not altogether crushed. Cosach, in the persons of Pablo Ramirez and Cappelen Smith, declared it could deliver nitrate of soda to meet any synthetic price competition, and make a profit!

And the synthesists themselves were ill-equipped to meet a new situation. Too lavishly had they drawn upon the material made available by science. Fertilizer stocks were mounting until they threatened to burst their silos, and prices were falling. What Germany had begun, England had continued—and Italy and France and Belgium and Poland—until almost every European nation was becoming self-sufficient, while in America were rising the fixation plants of Allied Chemical & Dye.

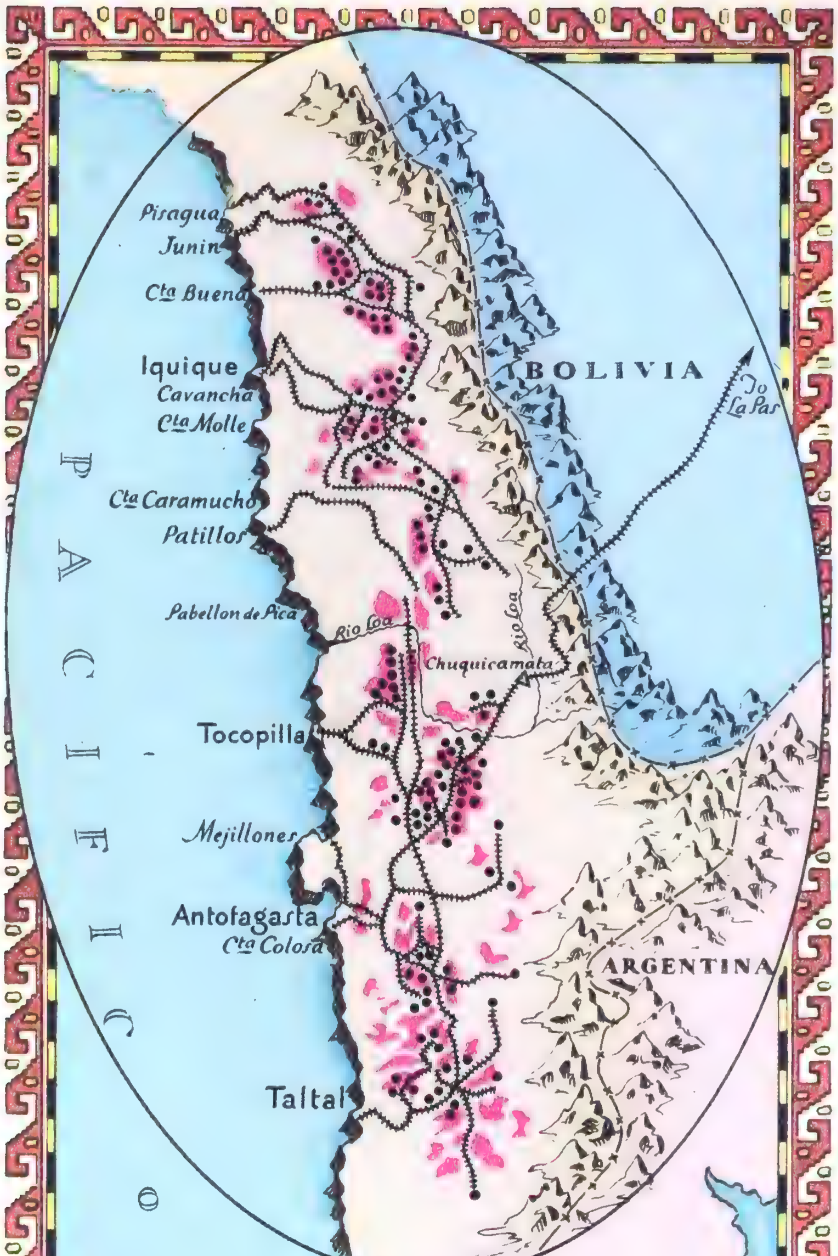
Thus the world of nitrogen sat down to the conference tables of Paris and Berlin, and pieced together its puzzle. When, on August 9, the last delegate left the I. G. Farben building at 78 Unter den Linden, the picture was as complete as diplomacy and self-interest could make it. The nitrogen map was remade. Under the terms of one of

THE HARBOR OF TOCOPILLA

. . which will remain a great nitrate port, and the coast range behind it, cutting ff the Chile nitrate fields from the sea and from the world beyond.

THE ATACAMA DESERT

. . . where lies buried the world's supply of natural nitrate and of iodine and upon which will rise the Guggenheim centrals.



THESE TWO MAPS OF THE CHILEAN NITRATE INDUSTRY COULD SERVE AS TEXTBOOK ILLUSTRATIONS OF RATIONALIZATION. THE FAR-FLUNG DEPOSITS, THE MANY MANUFACTURING PLANTS, THE LONG LINE OF PORTS—ALL THESE WILL BE TRANSFORMED INTO. . .

the most rigorous cartels in industrial history, each country's production (o synthetic) was severely limited, decreases ranging from 10 per cent in the cas of France to 50 per cent for England. Prices were fixed for each product i each country, excepting always America. Into a common pot each of the grea companies placed its forfeit, Chile's share alone amounting to $3,750,000 Insofar as diplomacy could devise, the industry was put in its place. And th profits should begin to roll in.

· · ·

This convulsive reorganization of a major industry, by far the most challenging industrial event of the year 1930, is of immediate concern to America industry and American investors. Not only because of the large stakes held b the four Brothers Guggenheim. And not only because it may be a threat to on of the newest of America's corporate giants, the Allied Chemical & Dye. Bu in all probability, the American investing public will be asked to share in th Cosach enterprise. Last July, therefore, FORTUNE sent its representative both to the natural nitrate fields of Chile and to that greatest of synthetic plants the Leunawerk of the I. G. Farben. The material they gathered, both analytical and illustrative, is condensed within the following pages.

Nitrogen: II—*Chile*

After 100 years, an industry takes a fresh start. The Guggenheims begin where Don Santiago stopped. And provide a copybook example of Rationalization.

THE most civilized, the most blasé man in the world cannot be entirely indifferent to the knowledge that he is directly above the equator. So small a matter as having the water run out of his bath counterclockwise instead of clockwise upsets him a trifle as he enters the Southern Hemisphere. The sight of cavorting whales and seals, who obviously belong in the Antarctic, adds to his perturbation. And from Callao to Valparaiso—six days by the fastest liner—he may scan the shore as long as he likes and see not a tree or a cactus or a blade of grass. Unless, with the aid of binoculars, he peeps into the garden of some prosperous Don Quixote who can afford to buy some black dirt and squander sweet water upon it. Or unless he visits a rancho such as that of the busy and prosperous Lautaro Nitrate Company or the public squares and swankiest drives of the larger ports. The ground is uniformly sterile, and water fit to drink or to use for irrigation must be brought all the way from the Andes in pipe lines across the Desert of Atacama. A long search will fail to find a more poorly favored land than the northern provinces of Chile, yet it was to determine sovereignty over this territory that the bloody War of the Pacific was fought to its inconclusive finish, that the long Tacna-Arica dispute was waged, and that General John J. Pershing's teeth were so long neglected.

This desert produces nothing usable for fuel, not even sagebrush. It contains one tiny fertile spot which grows a few oranges. Other than that nothing is or can be grown there. It has only one river, the brackish Loa, water from which has to be distilled before it can be used. It is separated from the fertile Argentine by the Andes, and from the Pacific by the coast range. But lifeless, remote, and barren as it is, it has largely paid the expenses of the Chilean Government during the past five or six decades, and has put into the pockets of American farmers some $937,000,000 in a hundred years.

As there are reasons for the reverse motion of the water in the bathtub, for the presence of whales at the equator, and for the sterility of the west coast, so there is for the glittering paradox of the Atacama Desert, but it is hidden beneath from three to four feet of avel and dust. The reason is *caliche*, a rock of less than granitic rength and of quite ordinary appearance. It is remarkable in that will sputter and sparkle in the flame of a match or even on the owing end of a cigarette. In it, besides quantities of table salt avily burdened with impurities, some carbonates, phosphates, lphates of little or no commercial value, a great supply of iodine d the only natural nitrate fertilizer that has yet been discovered. this desert, within an area of about 25,000 square miles, 7,500 les in an air line from Berlin, 5,000 miles from the U. S. cotton lt, is concentrated the world's entire visible supply of a substance ng acknowledged to be indispensable in war and now held necesry in peace—a whitish crystal which is an important component the explosives which for four years deafened Europe, which tother with potash and phosphates makes German tomatoes redder, tton bolls fatter, Iowa corn taller, and the entire world richer.

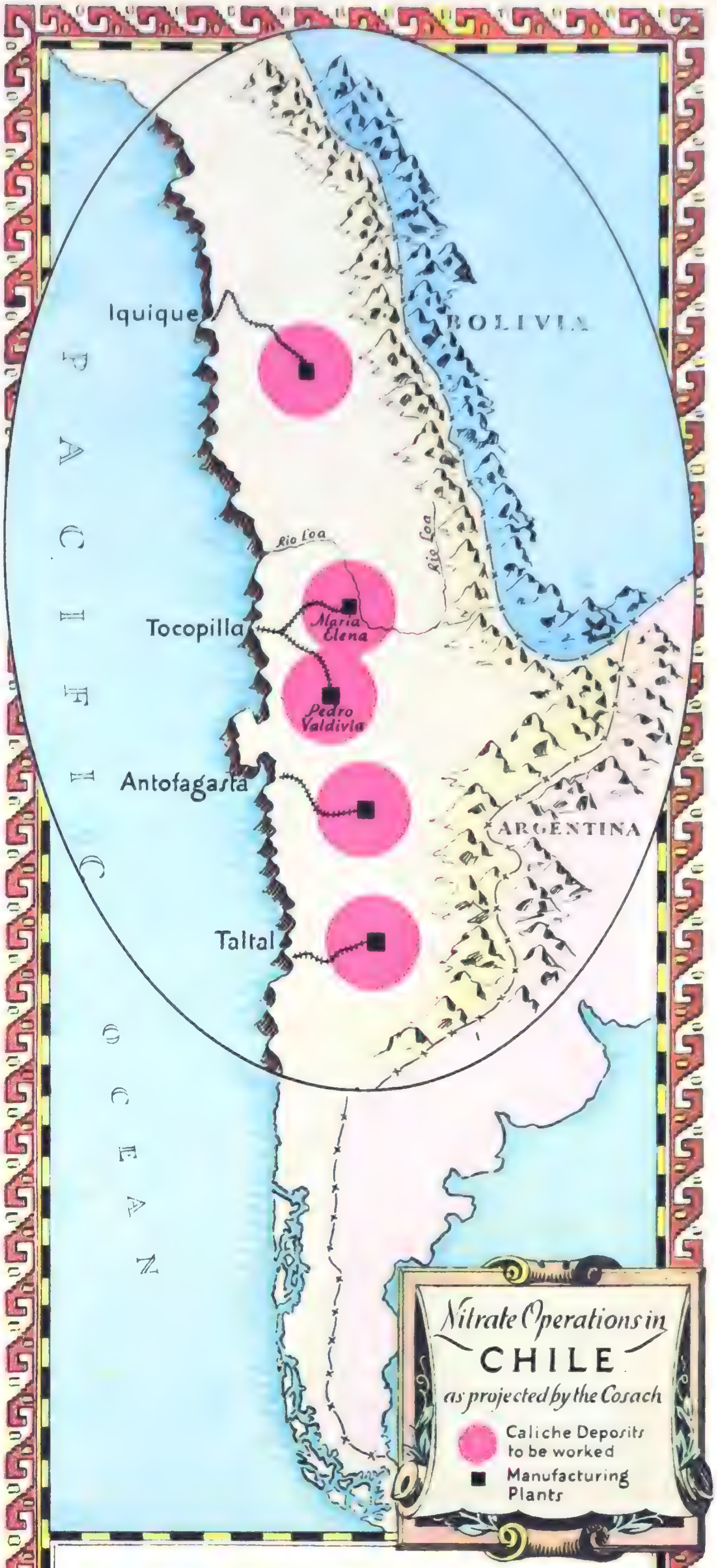
aboratory of the gods

Ever since the first discovery of this nitrate deposit, the chief inrest of man has been in methods of extraction and transportation. t scientists have found time to speculate as well on how it came to deposited there in the first place. That they should have apoached unanimity in the opinion that here was once and may yet the world's one great celestial nitrogen fixation plant, makes their chæology of uncommon interest, for it brings the natural and synetic nitrate producers into conflict in yet another particular. The eory of Pissis, advanced by him in 1887 and adopted largely by chsenius and Muntz and Humberstone, each with some reservans or amplifications, is that great electric storms must have raged er this plain in some geological age when the Andes and the coast nge were sufficiently low to permit such storms to cross, fixing the trogen of the atmosphere and forming nitric and nitrous acids. oday the coast range rises like a giant breakwater, but the static ectricity accompanying the dense fogs which drift up the valleys complishes more slowly, and in lesser degree, the same effect. The ids created by this terrific and demoniacal catalysis of the heavens l to earth and, reacting upon the bases in the soil, produced the trogen compounds to be found in the *caliche*. Virtually all researchs are agreed that some of the deposit was formed in this way. ne reserve may have been augmented by the work of microörganns in the bed of this primordial sea, or in many another way. But the now cloudless blue sky whence never a drop of water falls on e Chilean pampas was once a fixation plant which required none the intricate and costly machinery which is part and parcel of the mpeting synthesists.

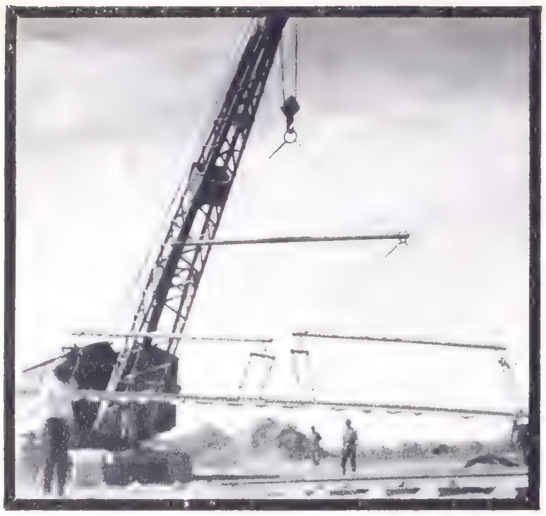
On this dreary plain, no one knows how long ago (but certainly ior to 1760), with the crudest of mechanical devices, Spanish iest and Araucanian Indian began to extract Chilean nitrates of da (long erroneously called "Chile saltpetre." Saltpetre is *potassium trate*, useful also as fertilizer). The theory upon which the most imitive lixiviation was based and that upon which the elaborate w Guggenheim process operates is one and the same: namely, that dium *nitrate* is more readily soluble in hot water than in cold, hereas sodium *chloride* (with which it is found in greatest abundce) is only equally soluble in hot water or cold, and much less luble in hot water if that water already contains sodium nitrate. ne action, therefore, is physical, not chemical, its graphic explanan a table of solubilities and not a sequence of formulas. A hot lution of the nitrate and the chloride of sodium drops the nitrate it cools, but keeps the chloride.

irth of heroes and monoply

When James Thomas Humberstone landed at Pisagua on January 1875, there were in operation some 165 nitrate plants, ninety-four diminutive and crude type, producing 120,000 tons annually, and venty-one equipped with machines which delivered slightly over 0,000 tons to the scattered barnacle-like port towns that cling to e Cordilleras. That most of the nitrate deposits lay within the undaries of Peru and Bolivia did not much concern Chile, because l of it had to be shipped from Valparaiso. To that port it went in



. . . FIVE AREAS TO BE WORKED, EACH WITH A FIFTY KILOMETER RADIUS, FIVE GREAT GUGGENHEIM MANUFACTURING CENTRALS, AND THREE SHIPPING PORTS WHERE THE NITRATE WILL BE BOTH WEIGHED AND LOADED BY MACHINERY



A MAJOR PROBLEM SOLVED

. . . with movable rails (left) and a movable power line (right). This electric transportation together with mechanical mining has made it possible for 165 men to do the mining once done by 2,450. Below:

THE PAMPAS FROM THE AIR

. . . showing the test holes sunk by government nitrate ore census takers—a million hole golf course with no greens or water hazards.

Photographs by Fortune-Chile

small coasting vessels to be concentrated in larger bottoms for transportation around the Horn to Europe and North America. Also from Chile the *oficinas* in the pampas bought fuel, forage (for the mules which have now been replaced by railroad and *camion*), and supplies. Chile made its profit in freight and handling.

But when in 1876 the government of Peru seized the *oficinas* and turned them over to the Bancos Associados (a British and Peruvian holding company), controlled the output at 350,000 tons per year, raised the price (per ton) from £12 to £18, and began to consign all shipments in vessels which brought in fuel as ballast, Valparaiso began to feel the pinch of circumstance. For Chile owned only the least important of three divisions of this desert, that which lies behind the port of Taltal. Bolivia held the more profitable deposits immediately to the north, in what is now the province of Antofagasta. Peru held the province of Tarapaca. Chilean nitrate commerce immediately dwindled to the sale of provisions and forage from the agricultural provinces in the south. No longer did it handle either the fuel or the product of the plants. In the Bancos Associados were the seeds of the War of the Pacific which soon flared up, sweeping the Chilean Army into and out of Lima, the Peruvian Army over the edge of the Morro del Arica into the sea, and filling the halls of fame of both countries with ample quotas of heroes. Chile occupied the nitrate districts in 1880, and by the terms of peace concluded two years later acquired them forever, thus establishing the world's premier example of a natural monopoly. It was both easy and logical for Chile to impose an export duty upon this vital commodity and reduce Chilean taxes to microscopic dimensions ($12 per ton on 2,500,000 tons equals $30,000,000). In 1894 the nitrate industry was paying nearly 68 per cent of the costs of the government; in 1929, with the industry in the doldrums, it paid over 23 per cent. For the entire fifty-year period, it averaged the extraordinary figure of 43 per cent.

HIC IACET

When a worker is killed at his task, the place is marked with a wooden cross by his friends. Though he may be buried miles away, the cross is decked with paper flowers, and at its foot burn candles in lanterns improvised from Gringo oilcans.

James (early rechristened Don Santiago) Humberstone still lives in Iquique. His memory and his activity cover the entire modern history of the industry which has been the backbone of Chile's life and which made itself the most internationally conspicuous of all the world's industries in 1930.

It was he who developed the Shanks Process, which rapidly became universal in the nitrate *oficinas*. Shanks, in England, had discovered the elementary principle in leaching sodium *carbonate*, namely, that a weak solution (and hence of lower specific gravity) introduced into a tank containing a stronger (and heavier) solution, will force the heavier solution on through a series of tanks equipped with *transito* pipes. Except for its basis upon this *theory*, the Shanks nitrate process owes nothing whatever to the scientist for whom it is named. The nitrate industry of Chile as it was recently discovered by the Guggenheims is the creature of the engineering and chemical genius of Don Santiago Humberstone. It is interesting that he hoards no fortune acquired in patents, has to show for his half century of labor, in addition to earnings in his own company, only the universal admiration of his adopted country and a tremendous silver medal, given him at the time of his retirement by a grateful, but at that time impoverished industry.

Don Santiago watched exportation from the 165 nitrate *oficinas* increase from 323,642 metric tons in 1876, through the banner year of 1916 when 2,988,369 tons were mined, to the birth of the *Cosach*. But since 1926 he has watched his own star fade. The Agua Santa Company, of which he was active head until 1928, has yet to follow the vast majority of the nitrate producers (certainly not more than 6 per cent are standing out) in the surrender to the new Guggenheim - government combination on terms which in many cases approach confiscation, but negotiations for its entrance are in active progress. He sees, for it is all about him, the

Photographs by Margaret Bourke-White

GERMANY'S INDUSTRIAL MAMMOTH

Scarcely ever does the sun penetrate to the broad streets of the *Leunawerk*, largest of the world's nitrogen fixation plants. For they are roofed with a network of pipes, some no larger than a man's arm, others six feet in diameter. They are the real traffic arteries of the I. G.'s great plant; through them rushes a constant flow of steam, water, gases, ammonia. On the right, a cathedral-like room in the fixation plant.

replacement of hand mining by mechanical methods which enable 165 men to do the work once done by 2,450. And this is no insignificant matter in a desert which must bring its vegetables 4,500 miles (from California), its sugar 3,000 miles (from Costa Rica), its coal and flour 1,800 miles (from the south of Chile), its beef across the Andes (from the grassy pampas of the Argentine)—the last of these on foot, the others by slow, coastwise steamers. He sees the beginnings of centralization of shipping in two or three ports, the introduction of weightometers and mechanical loaders (though it means the virtual abandonment of Caleta Buena and the Ferrocarril Agua Santa, the first a harbor and the second a railroad which he built himself). He sees the machines which he designed and the processes which he developed being ruthlessly discarded (in most cases without indemnity) to be supplanted by the tremendous centrals where the Guggenheim Process (the work, largely, of E. A. Cappelen Smith, who developed another famous Guggenheim Process at the Chile Copper Co. mines at Chuquicamata) will spray through a dozen pinholes the world's supply of natural nitrate.

Maturity and the Guggenheims

The Guggenheim Process, which is the immediate cause of Don Santiago's fall, had long been growing in the mind of Cappelen Smith. Though the story probably should begin with the great engineer, Pope Yeatman, who secured for the Guggenheims the world famous Chuquicamata copper mine. Fifty engineers had previously declined "Chuqui," declaring that the grade of ore was so low that it could not be worked. But Yeatman knew his copper. Had he not previously bought Braden and all the other low-grade copper mines for the Guggenheims? Cappelen Smith, a native of Trondhjem in Norway and already famous as co-inventor of the Pearce-Smith converter in general use throughout the industry, was sent to develop a process which would recover the copper. He did. By dissolving the ore in cold acids and by electrolytic recovery, he was able to deliver a product which is the standard of pure copper the world over.

This man could not go from Antofagasta to Chuquicamata without crossing the nitrate pampas. It was but natural that he should speculate on the possibility of translating the *cold acid* technique of Chuqui to a *cold water* technique for the nitrate field. Accordingly, he set to work. In three years the chemistry of nitrates was rewritten in New York laboratories. Then, to demonstrate these new theories, he built an experimental plant at Oficina Cecilia behind Antofagasta (a property of the Loa Company) and in two years more demonstrated the feasibility of his idea. Immediately the four Guggenheim brothers gathered in their joint office at 120 Broadway and issued orders to buy nitrate fields. They bought at auction from the government a nitrate deposit at Coya Norte near Tocopilla and added to it the Anglo-Chilean Nitrate Company grounds at Coya Sur. On these lands the spectacular Oficina Maria Elena was built and put into operation at the end of 1926.

Here with mammoth electric Bucyrus

shovels, the three-foot layer of overburden is scraped away, the *caliche* is "lifted" by blasts utilizing as much as 7,000 pounds of black powder (made in the plant from nitrate of soda and charcoal) in a single shot, breaking up in a few seconds 10,000 tons of the ore. The ore is carried by electric trains to the crushers at the plant (which may, in time, be as much as fifty kilometers from the *rajo* being worked). There boulders are reduced to rocks, rocks to pebbles about the size of a California cherry. Over this part of the plant hangs a pall of dust that settles on everything, caking into mud where oil or water lie. On giant conveyors, this crushed ore travels to vats of five to ten times the capacity of the largest Shanks vats. Water from the brackish Loa, distilled at the rate of 800 tons per day and costing sixty cents a ton, is allowed to seep downward through the ore, dissolving salt and nitrate. When the water has taken up all the nitrate that it can it is conducted away—and herein lies the principal variation from the older Shanks method—at atmospheric temperature. The Guggenheim Process cools this liquor to freezing, and accomplishes, without loss of heat, the same end that previously was accomplished by permitting a boiling liquor to cool to atmospheric temperature. It is not unlikely that here the Guggenheim Process was meant to terminate. But it was discovered that the nitrate, ultimately recovered from the cold solution in centrifuges, was so finely divided, so thirsty that it quickly took up moisture from the air and formed into white boulders the size and shape of the bags in which it was packed and practically impervious to the onslaught of crowbar or pickax.

Wherefore, this product is briquetted, then melted in a shaft furnace, and finally forced through a pipe which terminates in a fine spray cap. The scalding yellow liquid leaps high in the air, where it cools and forms into snow white beads that tumble back into the last conveyor, bound for the automatic weighing and sacking machines. These beads have a glaze which resists moisture and have a much more attractive commercial appearance than that of the irregular crystal of the old Shanks product. They also have a chemical purity of 99 per cent, 3 per cent higher than that of Shanks nitrate. Some agronomists and some of the old nitrate producers insist that this represents no advance or advantage—that in the 4 per cent of impurities in the Shanks nitrate repose many of the virtues of Chile nitrate of soda. But Don Santiago himself comes to the support of Cappelen Smith in this matter again, agrees that there is as much iodine in Guggenheim nitrate as in Shanks.

When the Agua Santa Company enters the *Cosach*, instead of his share in its *maquinas*, the roadway, and rolling stock of the 125-mile railroad, the incline and loading piers of Caleta Buena, Don Santiago Humberstone will hold only a sheaf of papers which represent an interest in the new company. He knows that until rationalization is completed, these papers will be worthless. And if his enthusiasm for the *Cosach* is less than vociferous, it is greater than that of some of his colleagues. They (not he) are inclined to use such ugly words as confiscation. For nitrate production under the *Cosach* will ultimately be centered in five tremendous plants—one near Taltal, two (Maria Elena and Pedro Valdivia) near Antofagasta and Tocopilla, two in Tarapaca, near Iquique. Each of these will work a *caliche* deposit fifty kilometers in radius. And, although all present *oficinas* contain machinery and materials that are far from disintergration, it must all be abandoned without indemnity, for none of it is adaptable to Guggenheim plants.

DON SANTIAGO HUMBERSTONE

Father of the nitrate industry, developer of the Shanks Process, which has made in fifty years some 70,000,000 tons. About nitrates he knows more than any other living man. Against *Cosach* he holds no grudge, although it will supplant his process with another.

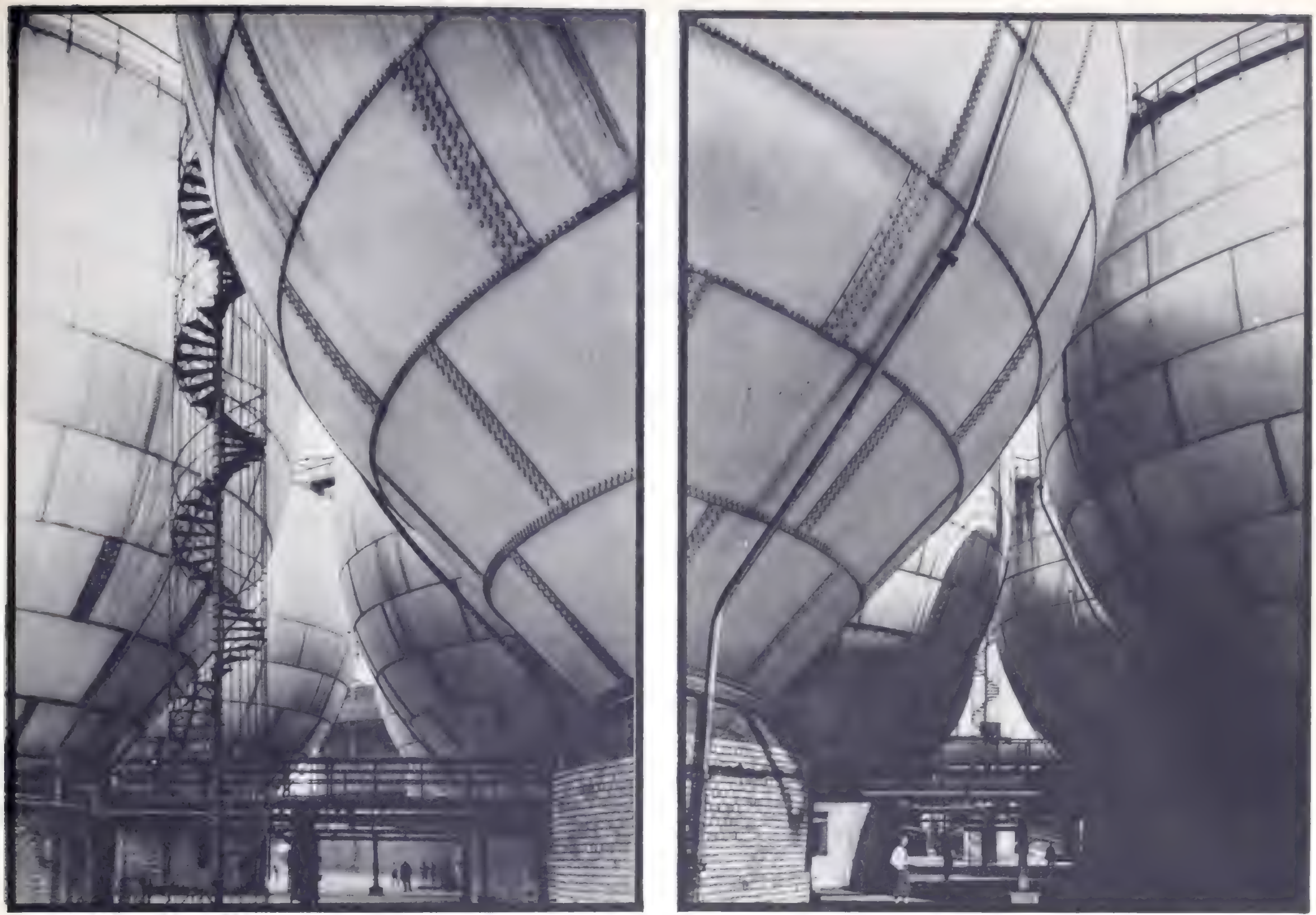
Merchants in the ports also raise their protest against centralization of the export. With the exception of Taltal, Antofagasta, Tocopilla, and Iquique, all the seaports along 600 miles of Chile's coast will virtually disappear, for there is no other product in the region except copper, and already its export is centralized in Antofagasta and, farther south, in Chañaral. Even Iquique will suffer for years to come, because Maria Elena and Pedro Valdivia between them will produce from 1,000,000 to 1,500,000 tons of nitrate, and are the only ones immediately projected for construction. The present population of Iquique is about 40,000. Optimists say that it will not drop below 10,000; pessimists think 5,000 a high expectation. Caleta Buena to the north now employs some 300 men to move 8,000 tons per month from car to ship. These men can move a thousand miles to the south of Chile and find work on the farms of that fertile district. Or they can starve.

NITRATE CRYSTALS

. . . before removal from the crystallizing vats of the Shanks Process as it is applied in Oficina Chacabuco (Lautaro Nitrate Company), largest existing Shanks plant.

CALDO IN THE VATS

. . . ready to drop its nitrate crystals as the boiling liquor cools. Beyond the tanks, mountains of nitrate in open air storage waiting to be bagged and taken to the port.



Photographs by Margaret Bourke-White

AMMONIA TANKS AT LEUNA

It is said that so daring a move as this of the Guggenheims would have surely caused revolution except for the favoring conditions of a stricken industry and a popular president. Don Carlos Ibañez del Campo, onetime *carbinero*, is *of* the People. The People are confident that he is *for* them as well. But there are hot-heads—youngsters, chiefly—who do not see the whole picture. University students, for example, declare that Chile has been sold down the river. A cordon of forty *carbineros* was required to hold the students at bay outside the grand hall of the Universidad de Chile during the ceremony of conferring honorary degrees on four prominent American agriculturists in the nitrate centenary week. These are the Unreasonables. They cannot properly weigh the starved seaports against the glamorous thing called Rationalization. They still live in that carefree time when Don Santiago Humberstone was young and when no one had thought of raising the mammoth towers of *Leunawerk*. They are futile and rather silly in their vain tilting of lances, for the *Cosach* and the results of Paris are quite literally Chile's golden hope. But it is possible to excuse them—even the Guggenheims will excuse them—if they do not raise their cheers.

Nitrogen: III—*Biggest Leuna*

How the Pride of Europe started something and why it could not control it.

If this first Paris group represented one of the most rigid of natural monopolies, the secong group spoke for a scientific achievement no less notable. What Chile had mined from the earth, Germany had drawn from the air. With tremendous effort and expense. Partially by accident, but chiefly by design. And with brilliant success.

To look at the *Leunawerk* of the I. G. Farbenindustrie is to be conscious of no accidental quality. Rather does this 1,500-acre square—the largest nitrogen fixation plant in the world—appear the ultimate monument of industrial design. Here are streets whose roofs are incredible networks of pipes, weaving endlessly from generators to gasometers, from compressors to contact ovens, a ganglia of chemical blood vessels, with veins a few inches wide, with arteries through which a man could walk erect. And through this ganglia rushing rivers of water (enough each day to supply Chicago), torrents of steam (from the world's greatest generating station), of strange gases, of hydrogen, of the ammonia which this gargantuan city was built to produce. Nowhere does the *Leunawerk* seem less accidental than at its terminus, the final goal of all these pipes, the silos from which calcium nitrate and ammonium sulphate are loaded into cars and shipped to the world. The greatest of these silos would make a roomy packing-case for the Coliseum. Here rise glistening white mountains of fertilizer

Courtesy Anglo-Chilean Consolidated Nitrate Corporation

ORE BY THE TRAINLOAD TO MARIA ELENA'S CRUSHERS

Now trainloads of ore in chunks as large as boulders wait their turn on sidings below the giant preliminary crushers. The dust cloud in the distance hides the crusher from sight day and night except for an hour or two at dawn when its jaws are rested and overhauled.

VATS OF THE NEW ORDER AT MARIA ELENA

Twenty such, each with a capacity of 7,850 tons of ore, meet the eye of visitors to this first Guggenheim plant. Shanks Process men gape at them, goggle-eyed. Never before have they seen vats larger than 1,800 tons capacity; few are more than 500. The liquor pouring in from the side pipes will dissolve the nitrate.

(ammonium sulphate), into which dig endless shovels upon endless belts and upon which pours a perpetual rain to replace what the shovels have carried away.

The *Leunawerk* is unquestionably the most impressive industrial exhibit in Europe. Fittingly, it is the particular pride of Europe's mightiest industrial enterprise. For the company which shortens its interminable name (*Interessen Gemeinschaft Farben-Industrie Aktiengesellschaft*) to I. G. Farben has the largest capitalization ($250,000,000), enjoyed in 1929 the largest net income ($25,000,000), and employs the greatest number of men (130,000) of any concern outside the U. S. It is also the most modern of European companies, and together with Krupp the most technically progressive and efficient. The fixing of nitrogen, which is carried on chiefly at the *Leunawerk* but also at the smaller *Oppauwerk*, occupies only one of I. G.'s innumerable hands. At *Leverkusen*, another industrial mammoth which Dr. Carl Duisberg magnificently built across the Rhine from Cologne, I. G. centers its manufacture of pharmaceuticals. Here, and at Hochst, Frankfort, Ludwigshafen, are the great dye plants, the product of which formed the basis of the mergers which evolved I. G., and even today, despite the prominence of nitrogen, perhaps the most stable factor in the I. G. set-up. But even with nitrogen and dyestuffs, the list of major I. G. activities has only begun. The patents on its leading synthetic medicines (see page 45), to which each year its laboratories make new contributions, provide it with a wide and sure market. Last month, the two I. G. chiefs—Dr. Hermann Schmitz and Dr. Carl Bosch—were expected in America to discuss their newest enthusiasm, the hydrogenation of oil. Already, I. G. has divided the world with Standard Oil of New Jersey in a pact which points to the time when gasoline recovery from crudes of 90 per cent (a reported result of Standard's first experiments under I. G. patents) will be economically efficient, when at last coal and tar must be tapped to supply even the minimum world demand for oil.

Thus the I. G.'s importance is not at all confined to the field of nitrogen, although within this field it has been most generally and spectacularly publicized. The importance of I. G., indeed, may very well be said to be European, if not international. As Europe's greatest company, largest employer of labor, its stability and prosperity are matters of concern to the entire continent.

The *Leunawerk* was an accident because its giant builder did not foresee its real use or its real significance. *Leuna* sprang from the War emergency, an answer (to cost, eventually, $75,000,000) to the question of how to make explosives without Chilean nitrate. With the steel ships of the blockade steaming

E. A. CAPPELEN SMITH

The genius of Chuquicamata and of the nitrate industry. Time and the future price of nitrate alone will determine whether his mammoth plant at Maria Elena was a promise or a warning.

Photographs by Margaret Bourke-White

WORLD'S LARGEST SILO

Here stand great mountains of ammonium sulphate for which the I. G. Farben sucks nitrogen from the German air. But of late months the piles of fertilizer on the left have risen faster than the shovels on the right could carry them away for sale. Over-production and competition have brought I. G. into the new cartel.

between South America and Germany, a nitrate import amounting to some $50,000,000 a year was abruptly ended. But explosives could not be made without nitric acid. Hence the *Leunawerk,* made possible by a half-century of research in the U. S. and abroad, made practical by the fiercely precise mind of Fritz Haber, built by the BASF (Badische Anilin und Soda-Fabrik), and paid for by the government. Its War purpose was brilliantly served. From the air, *Leuna* drew its nitrogen, joined it with hydrogen under a pressure of 200 atmospheres at a temperature of 600 degrees Centigrade. From the resulting ammonia, during the last years of the War, *Leuna* pointed to an annual production of 200,000 tons of nitrogen, most of which is now mixed with the air above the Hindenburg line.

The War at length came to its end. But *Leuna* remained. And while Krupp could make truck chassis as well as cannon, there was no possible use for nitric acid. It was a new German chemical genius, only forty-four when the War ended, who discovered what to do with *Leuna.* Perfecting the manufacture of ammonium sulphate with gypsum (instead of sulphuric acid), Dr. Carl Bosch became the I. G. chief. Almost from the beginning, *Leuna* could produce 500,000 tons of nitrogen fertilizer each year. The blockade lifted, but Germany took only a fraction of what Chile offered. Feverishly the world was scoured for markets. And the vast *Leuna* silos began to fill.

Today, they are filled very high, and therein is one of the reasons why I. G. sent its smart Dr. Hermann Schmitz to the meeting at Paris. When once the Chilean strangle hold had been broken, synthetic fertilizers appeared throughout the world. Last year Lord Melchett's I. C. I. produced some 250,000 tons; Italy manufactured more than it could use; at Hopewell, Virginia, the newest Allied Chemical & Dye units began to produce nitrate of soda in commercial quantities. Another enormous addition to the stocks of synthetic fertilizers has come from the steel operators of the Ruhr and elsewhere, recovering by-product ammonia from coke ovens and making it into fertilizer. As a result, and in spite of early cartelization efforts, prices of both the natural and the synthetic have steadily fallen, Chile nitrate of soda sinking below $40 a ton, and I. G.'s sulphate of ammonia sinking to $33. All the cultivated fields of the world cannot use as much white powder as is now accumulating in the storehouses. And I. C. I. operated last summer at about 35 per cent of capacity, *Leuna* at not more than 50 per cent.

The size of the *Leunawerk,* the huge investment it represents, is the I. G. problem. The I. G. is top-heavy with nitrogen, as it is top-heavy with the officers of the many companies which it has swallowed, as it is top-heavy with the gorgeous marble administration building at *Leverkusen* (a pre-merger legacy), as it is top-heavy with a list of sixty managing directors and forty-eight members of the supervisory board. As it is top-heavy, if such a thing be possible, with the most trusted and pampered laboratory staff in industry. It is difficult for the I. G. to move. And the last year proved conclusively that in the matter of nitrogen, motion was necessary. Accordingly it brought the great weight of its presence to Paris, entered the conference room where sat the representatives of a natural monopoly which it once thought to have crushed, proceeded to take a hand in the business of putting the world in its place.

[*Continued on page 105*]

Adamses Alive

Include the Secretary of the Navy, "Pop," and Astrologist Evangeline. Notes on the development of one of our first and foremost families.

AN IDEAL aristocracy would surely be one whose members combined distinction of character and mind, lineage and lineament, breeding and deportment, deed and personality. Such an aristocracy is not to be found nor scarcely approached on Park Avenue, nor yet at Southampton, nor yet at Newport. In America its closest approximation is perhaps still discernible in the scattered councils of some very few families. And of these, none is more distinguished than the Adams family, traditionally of Quincy, Massachusetts. It has just been the subject of an able biography by James Truslow Adams (no relation), who traced it from its American beginnings with Henry Adams, a farmer who died in Braintree, Massachusetts, in 1646, to the death in 1927 of the erratic Brooks Adams, historian.

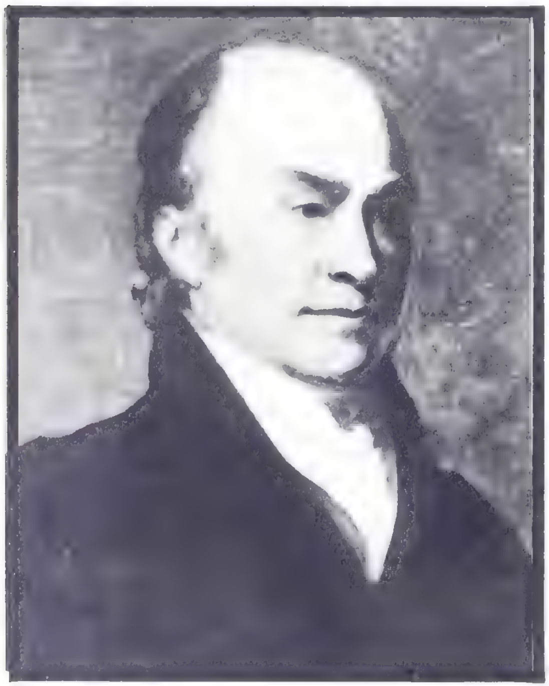
The Adams family produced four distinguished generations of men without taint, high-minded, disinterested, erudite, gracious. They served the state without politics, scholarship without pedantry, and business without sly practice. It is unlikely that the family could have persisted with such honor had not the Adams men habitually mated with women who shared their qualities. These couples formed as ideal an aristocracy as any the U. S. can point to. What has the clamorous, grasping big business era done for their patrician line? Can such a line adapt itself to the new age without losing its distinctive character? In the succeeding pages we shall attempt to suggest an answer to these questions by sketching the background and careers of the living Adamses.

The Adamses were distinguished before they were rich, an unusual fact in a country where distinction so often consists solely of wealth or the methods whereby wealth is obtained. President John Adams was fortunate in his wife, that astonishing matriarch and lady of letters, Abigail Smith, about whom it might perhaps be said that she was an even greater woman than he was a man. But John had very little money. His son, President John Quincy Adams, also enjoyed a remarkable spouse, graceful and stout-hearted Louisa Johnson, daughter of the Maryland squirarchy, who had spent most of her girlhood in France. But John Quincy had as little of the world's goods as his father. These men were too busy as pioneer American statesmen to accumulate money. It was not until the third generation that the Adamses acquired money and then, as might have been expected, it came from the remarkable distaff side of this remarkable family. Charles Francis Adams, the grandfather of the present Secretary of the Navy, married the daughter of the merchant, Peter Chardon Brooks, Boston's first millionaire. Old Peter Brooks settled on his daughter and her husband some $300,000, which must have been somewhat embarrassing for Charles Francis, who was as unused to the dry crackle of bank notes as his forebears. He had been engaged in such unprofitable employment as Minister to the Court of St. James's (throughout the Civil War), a post which rewarded him as richly in public repute as it prevented him from making a good living.

But the $300,000 undoubtedly helped to fledge Charles Francis's four sons. As the first substantial capital in Adamsian history, it was no doubt partly responsible for the fact that this fourth generation was the first of the line to appear at all prosperous. This was the crucial, the telling period. The Civil War was over. Out of its ashes was rising the grimy and enormous phœnix of American industry. Opportunities for aggrandizement were everywhere; the impulse to it was a nation-wide contagion. Even the stately Brahman strongholds of Boston succumbed, and the prim façades of Beacon Hill and Commonwealth Avenue began to be as bank vaults concealing great fortunes quietly but shrewdly made in textiles and shipping and western railroads. How did all this affect the brilliant, scholarly, conscientious Adamses? One might expect that they would have abjured the channels of commerce. And one would have been substantially correct regarding three out of four of the Minister's sons. The eldest, John Quincy, was disgusted by the Republican conduct of Reconstruction, became the leader of the unhappy Democratic cause in Massachusetts. The peak of his political career was his nomination for Vice President on the same ticket with one of the most obscure presidential candidates in American history—Charles O'Connor. But they failed with the reëlection of the tragic Grant. John Quincy died in 1894, twenty years before the next brother. His fortune, remarkable neither for the times nor for Boston, was rumored to be in the neighborhood of $1,000,000, which was probably largely obtained by the judicial investment of his inheritance.

Henry, the third and most celebrated son, and Brooks, the fourth, were the finest examples the family affords of its love of learning. Henry, the Anglophile, Harvard historian, and traveler, speculated on the laws which he conceived must govern human events as other laws govern physical organic change.

[*Continued on page 117*]



Keystone

PRESIDENT JOHN QUINCY ADAMS
1797-1801

Keystone

PRESIDENT JOHN ADAMS
1825-29

MRS. HENRY STURGIS MORGAN (Catherine Adams), daughter of the Secretary of the Navy, married the younger son of J. P. Morgan in June, 1923, one week after he was graduated from Harvard. Last year her husband was made a partner in his father's firm, together with the sons of two other partners—Thomas W. Lamont and the late Henry Pomeroy Davison. By Mr. and Mrs. Morgan, the late President John Adams already has three great-great-great-great-grandsons.

International

MRS. HENRY STURGIS MORGAN

MANY teachers and educators have continued the family's distinguished intellectual tradition. Among them: *Roger Adams*, head of the chemistry department of the University of Illinois. His most important work has been the development of synthetic substitutes for chaulmoogra oil for leprosy and the perfection of Procaine, a non-habit-forming substitute for cocaine. *Edwin Plimpton Adams*, head of Princeton's department of physics, a shy, scholarly product of many institutions of learning. *George P. Adams*, his brother, professor of philosophy at the University of California. *Kathryn N. Adams*, sister of Edwin and George, chief of the Constantinople College for Women.

ROGER ADAMS

Photo Edwin Levick

CHARLES FRANCIS ADAMS AND SON

CHARLES FRANCIS ADAMS, small, tanned, wiry Secretary of the Navy, is the son of the late Democrat and amateur smelt fisherman, John Quincy Adams, who was offered the same secretariat by Grover Cleveland. By most of the family he is considered its present chief. His mother was a Crowninshield from a renowned Massachusetts family of expert yacht designers which produced two Secretaries of the Navy. Everyone knows that the Secretary is an inveterate yachtsman, that it was he who piloted the yacht *Resolute* to victory over Sir Thomas Lipton's *Shamrock IV* in the America's Cup races of 1920. When Mr. Adams assumed the secretariat, President Lowell of Harvard characterized him as "good at everything." The "everything" should be particularly applied to matters nautical, financial, congenial. The fact that he is a teetotaler, does not smoke, and is given to high stiff collars helped earn him the nicknames "Deacon" (which he likes) and "Angel" (which he doesn't), but did not prevent him from being the most popular member of Harvard '88 and its president throughout his course. During his thirty years as Harvard's treasurer, the University's investments increased from some $10,000,000 to about $110,000,000. He is presumably the wealthiest of the living Adamses; his fortune is estimated as close to a million dollars. When he entered the Cabinet he resigned directorships in some thirty-five corporations, including American Sugar Refining Co., A. T. & T., Bigelow-Hartford Carpet Co., John Hancock Mutual Life Insurance Co., Lee Higginson Trust Co., Old Colony Trust Co., Amoskeag Co. Upon his arrival in Washington he was faced by a battery of cameramen demanding that he pose at the secretarial desk, writing. He did so, wrote, "This is hell, this is hell, this is hell . . ." He began sailing at ten, is still navigating at sixty-odd, and has brought up his son, Charles Francis Jr., now Harvard 1932, in the same healthy tradition. In 1891 he coached a Harvard crew which beat Yale. A stickler for shipboard discipline, he is extremely casual in nautical dress. An elegantly attired regatta committee was once appalled to discover Mr. Adams tuning up the *Resolute* while wearing a derby. "Pardon me," he remarked, "I will retire for a few moments and return, dressed for the occasion." He is not much of a speech-maker, but has a dry, succinct wit. On his way home from the London naval conference he was invited to act as helmsman of the 59,000 ton *Leviathan*. Relinquishing the wheel after twenty-five minutes, he observed: "She's a bit lively." Mrs. Adams is the former Frances Lovering, daughter of a late cotton mill owner and Congressman of Taunton, Massachusetts. In Washington she is much occupied with a rock garden; in Boston with the Pottery Club, whose matron members are instructed in moulding, glazing, *et al.* Although too poor a sailor to accompany him, she follows her husband's voyagings through field glasses. Whenever possible during weekends she plays tennis with him.

WHILE he lived in Boston, the Secretary of the Navy was constantly receiving written requests for free passes to hockey games and was once routed out of bed in the dead of night by a long distance telephone call demanding that he rescue a hockey player whose highjinks had landed him in a Montreal jail. This was due to the fact that the president of the Boston Bruins hockey team is one Charles Francis ("Pop" or "Big Boy") Adams, fifty-three, who is continually being confused with Deacon Adams. Pop Adams claims to be an eighth cousin of the Deacon through Edward, son of Henry of Braintree. The Deacon has never publicly denied the claim. He and Pop have never met, but they are both very polite about the bother they cause each other. Pop is frequently asked for investment and genealogical advice and received numerous congratulations when the Deacon became Secretary of the Navy. Besides his hockey interest (which is his hobby as well as part of his livelihood), Pop Adams is vice president of the Boston Braves baseball team and a director of several organizations including First National Stores, Waldorf System, Inc. (restaurants), the Legal Stamp Co., and the Old Trusty Dog Food Co. He was born in Newport, Vermont, works in Boston between a big photograph of Theodore Roosevelt and a copy of the Declaration of Independence, and lives in pastoral Framingham. There Mrs. Adams (Lillias Mae Wollard of Ontario) pursues her fancy for harness-racing, owning a dozen blooded steeds, among which is *Better Win*, who holds world's records for a pacing colt on a half-mile track. Pop's features are not unlike those of the Secretary of the Navy; his secondary nickname, "Big Boy," is the best key to the physical difference between them.

Blank-Stoller

CHARLES FRANCIS ("POP") ADAMS

Underwood & Underwood
CHARLES LANGDON ADAMS

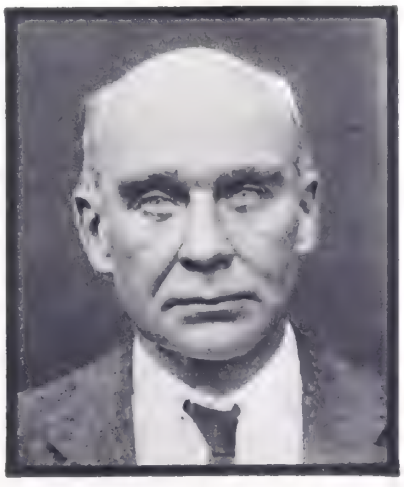
CHARLES LANGDON ADAMS, forty-four, of Pelham Manor, New York, characterizes himself and his wife as "not particularly interesting people." Interesting or not, they typify the numerous if unpublicized solid citizenry of the Adams family. Mr. Adams left school at eighteen and entered his father's business, of which he is now president—Cross, Austin & Ireland Lumber Co. of Brooklyn. In the winter Mr. and Mrs. Adams play a good deal of bridge. In the summer Mr. Adams repairs to Montana for riding, fishing, and hunting. He has a small son and daughter.

SAMUEL HOPKINS ADAMS began writing while still at Hamilton College. But not until he was fifty-five did his career reach its climax. Republicans from Spokane to Philadelphia shuddered at the picture of the Harding administration drawn by Mr. Adams in *Revelry*. Blond, of great energy, he is the typical Nordic with the Nordic's love of a fight. Through magazine articles he led a crusade against fraudulent advertising practices so successfully that the American Medical Association rewarded him with an associate membership.

P. & A.
SAMUEL HOPKINS ADAMS

International
EDWARD DEAN ADAMS AND FRIENDS
(LEFT) DR. NICHOLAS MURRAY BUTLER (RIGHT) PROF. F. W. J. HEUSER

IF THE Secretary of the Navy be the richest living Adams, the most venerable is surely Edward Dean Adams, eighty-four, of New York and Rumson, New Jersey. Descending like his distant cousin Evangeline from John Adams of Menotomy (son of Henry of Braintree), he is white and bent but talkatively *au courant* with business, scientific, and artistic affairs. His den, clustered with snapshots of grandchildren, family portraits, trinkets, genealogies, books of his own authorship, is a little museum of his past and his legacies, vital and intellectual, to the future. Born in Boston, he attended Norwich University and M. I. T. As a partner in Winslow, Lanier & Co., New York bankers, he organized the Northern Pacific Terminal Co. (president 1882-86), St. Paul & Northern Pacific Railroad Co. (vice president 1883-87), New Jersey Junction Railroad Co. He reorganized the Central Railroad Co. of New Jersey. In 1893 he resigned his banking affiliation to devote himself to corporate work on his own account. At the time he was reorganizing and financing the nearly bankrupt American Cotton Oil Trust (board chairman 1890-96), and was president (1890-99) of the Cataract Construction Co., which under his direction accomplished the great power installation at Niagara Falls, an unprecedented engineering feat. Simultaneously he was reorganizing the Northern Pacific Railroad (board chairman 1896-97) involving $300,000,000, and was representing the Deutsche Bank of Berlin in the U. S. (1893-1914). In 1896 he floated a $100,000,000 gold loan to the U. S., subscribing to one-fourth of it for the Deutsche Bank, which averted an American panic. His diverse predilections have caused him to be trustee, fellow, patron, or life member of more than forty cultural and scientific bodies, among them the Metropolitan Museum of Art and the American Association for the Advancement of Science (trusteeships). In 1920 he retired from active business; in 1925 Mr. Adams was banqueted at the Waldorf-Astoria. Among those who signed a *Friendship Volume* were George F. Baker, Nicholas Murray Butler, Robert W. DeForest, Thomas A. Edison, Cass Gilbert, Frederick W. MacMonnies, Samuel Insull, Charles M. Schwab. Said Mr. Edison: "Thanks to Adams and other optimists, the great curve showing the rise in wealth and progress of the U. S. constantly points upward at an angle of twenty degrees, full of saw teeth, but it always ends a little bit higher."


HENRY ADAMS

ROBERT C. ADAMS

ROBERT C. ADAMS of New York, vice president and director of Bancamerica-Blair Corp., is one of the most distant and unusual relatives of the Presidential Adamses. Stemming from an uncle of Henry of Braintree, he is a self-made man. He was born fifty-seven years ago in Scranton, Pennsylvania. By virtue of astonishing mathematical talent, he rose from office boy at thirteen to secretary at fifteen of the Scranton Passenger Railroad Co. At twenty-three he was treasurer and director of the $10,000,000 Spring Brook Water Supply Co. and began collecting paintings (ultimately work by Inness, Manet, Boardman Robinson). Says he: "I am only interested in modern stuff. I suppose that is perfectly logical since I had so little education. I am interested in the age we live in because that is the age I know about." As a young man he also studied the cello and the French tongue, spent his vacations with an artist and daubed "for my own amazement." At twenty-five he helped form a Scranton symphony, playing the cello, "and damned badly, too." Later he married Kate Sherwood, daughter of a coal operator, and moved to New York. They have one son.

HENRY ADAMS, bachelor of Boston, is the son of the late railroadman, Charles Francis Adams. Meticulous, slow-going, he is a family trustee like his cousin Arthur, with whom he shares an outmoded State Street office. From its windows he may observe a brass marker on the sidewalk below, denoting the location of the Boston massacre, a reminder that his great-great-grandfather John Adams, sage and cool while all Boston was afire, undertook the defense of the British officer involved and had him acquitted. Henry's particular charges are Adams properties in Spokane, Washington, and a development site in Lewiston, Idaho. He is the family genealogist.

SOME thirty-six years ago a young Chicago lawyer named Samuel Adams began to pay court to Louise Koerner, descendant of the first governor of Illinois. Her father asked his friend, the late Judge Elbert H. Gary, about the young man's reputation. Judge Gary replied: "Yes, I know Samuel Adams quite well. He is one of the most brilliant and cockiest lawyers in town." At the age of twenty-two, Samuel Adams refused the deanship of law at the University of Illinois because Louise Koerner did not wish to live in a small town. Now, at fifty-eight, he is among Chicago's outstanding practitioners (Adams & Hawley), specializing in constitutional law. Still hard-driving, aggressive, he looks like an elderly military man, is locally noted for his memory. He plays contract bridge and tennis, drives his Stutz very rapidly, joins his wife and their friends in weekly meetings at which old and new plays are read aloud, each person present being assigned a part. When his son, Charles True Adams, was a law student at Northwestern he heard Dean Wigmore declare in a lecture: "I believe that Samuel Adams is one of the greatest legal minds of modern times." Chicagoans have seen Mr. Adams overwhelm legal opponents, win a case with quotations from *The Hunting of the Snark* and *Alice in Wonderland*. He was Assistant Secretary of the Interior under President Taft. He is descended from Henry of Braintree through his son Joseph, and was born in Syracuse, whither Mr. Adams's mother had gone to stay after her home had been gutted by the Chicago fire.

International
SAMUEL ADAMS

Nickolas Muray
EVANGELINE ADAMS (MRS. GEORGE EDWIN JORDAN)

AT HER office in Carnegie Hall, Evangeline Adams and more than a dozen assistants dispense mail order horoscopes at $10, personal astrological interviews at $20, regular planetary reports at $20 a year, Miss Adams's textbooks on the stars at $3.00. In the past twenty years she has cast about 250,000 horoscopes and given endless advice on questions of the body, soul, and coin of the realm. She utilizes forty-four radio stations; by clipping certain Forhan's tooth paste coupons you may get an Adams horoscope free. Her annual income is estimated at not less than $50,000. Of the other Adamses she says: "They opposed my connection with astrology by every means within their power." The Presidential Adamses may console themselves with the thought that she is not in their line, although she *is* descended from Henry of Braintree. Short, stout, bobbed and gray of hair, she was born in Jersey City, New Jersey, and studied the welkin early under the tutelage of one J. Heber Smith, physician and astral amateur. In Boston she pursued palmistry with the late great Cheiro, but abandoned it as less exact than astrology. She lays claim to no psychic performance, merely the application of definite laws of influence. She records that she assisted the late John Pierpont Morgan in his financial dealings, prophesied the deaths of Enrico Caruso and Edward VII, the great Windsor Hotel fire, the outcome of the Tunney-Dempsey fights (she would not spoil the bouts, however, by making her deductions public). Among her past and present clients she names such diverse celebrities as Tallulah Bankhead, John Burroughs, Cardinal Gibbons (his horoscope resembles the late Houdini's), and the late O. M. Hanscom, whose connection with Miss Adams presumably faciliated his work as head of the Pinkerton Detective Agency. Some years ago, having refused offers of marriage from Sir Franklin Simmons, British sculptor, and one Mr. Lord of Boston, neither of whose horoscopes jibed with her own, she arranged to meet a certain George Edwin Jordan, whose birth had occurred beneath more propitious skies. The sequel has been a happy marriage. Mr. Jordan, a large, suave gentleman given to checked suits and diamond tie pins, is perhaps fifteen years younger than his wife. He is a promoter of parts. And although his name is never mentioned in connection with Adams astrology, there are those who think that his wife's bureau, receiving from 4,000 to 5,000 letters a day, is his biggest promotion to date. The symbolic elephant decorates his Carnegie Hall office.

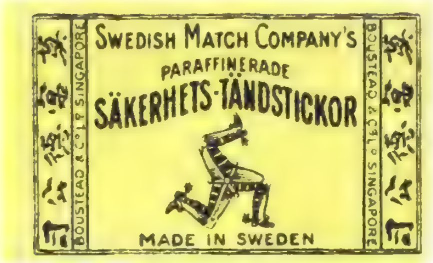
ARTHUR ADAMS

LOUISA CATHERINE ADAMS is the wife of the eminent T. N. Perkins, Boston lawyer, reparations committeeman, and great friend of Owen D. Young. Because she is deaf, Mrs. Perkins misses the slang which her husband employs with such virtuosity that the late President Eliot, at a meeting of the Fellows, once requested: "Will some one kindly translate Mr. Perkins' remarks into English so that I may understand them?"

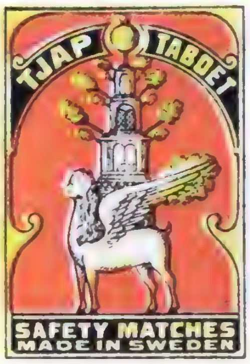
International
THOMAS NELSON PERKINS

ARTHUR ADAMS, breezy brother of the Secretary of the Navy, announces his occupation as class secretary of Harvard '99. But he really has more to do than this would indicate. He is a trustee of the Adams family estates and an astute investor: his fortune is ranked with that of his brother. Active in social work, he is president of the Boston Children's Aid Society and is variously connected with the Boston Society for the Care of Girls, the Family Welfare Society, the Sailors' Snug Harbor of Boston, and the Farm and Trades School on Thompson's Island, Boston Harbor. The boys of the last institution, always 100 in number, knew him for years as the false-bearded Santa Claus who visited them each Christmas with innumerable gifts bought with his own money. He could call more nicknames than the superintendent himself. Just after the War he married Mrs. Francis W. Sargent Jr., a widow with two children, daughter of the elderly George Lee of Boston, president of the Etna Lead & Zinc Co. She has borne two children to Mr. Adams. Less celebrated as such than his brother, Arthur Adams is none the less considerable of a tar. Most of his spare moments he spends on the water. For a long time he and the Deacon gave each of their boats a name with a double *o*. Between them they had the *Papoose*, *Babboon*, *Gossoon*, *Harpoon*, *Rooster*, *Crooner*.

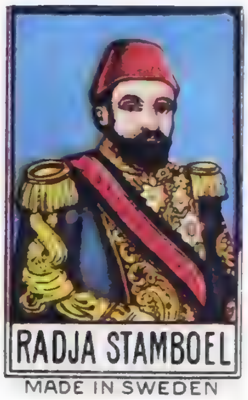
A Prince's Favorite and Lord Kitchener of Khartoum


SWEDISH MATCH COMPANY'S
PARAFFINERADE
SÄKERHETS-TÄNDSTICKOR
MADE IN SWEDEN
BOUSTEAD & CO. SINGAPORE

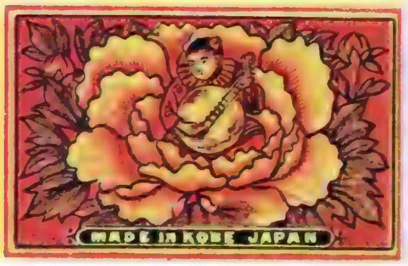
SINGAPORE


TJAP
TABOET
SAFETY MATCHES
MADE IN SWEDEN

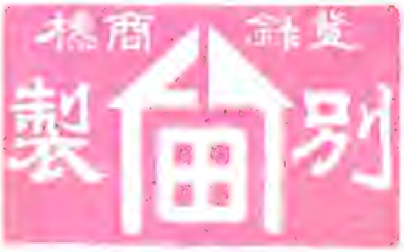
DUTCH EAST INDIES


RADJA STAMBOEL
MADE IN SWEDEN

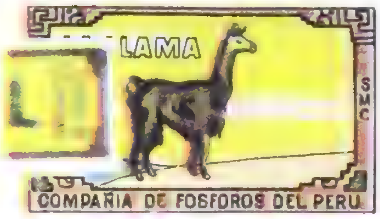
TURKEY


MADE IN KOBE JAPAN

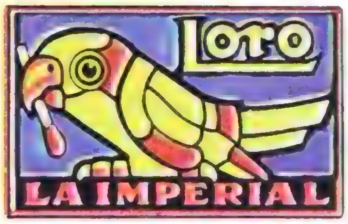
JAPAN



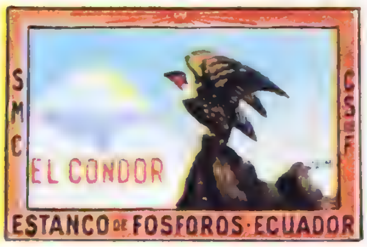
JAPAN


LAMA
SMC
COMPAÑIA DE FOSFOROS DEL PERU

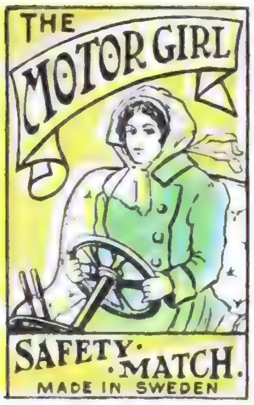
PERU


LORO
LA IMPERIAL

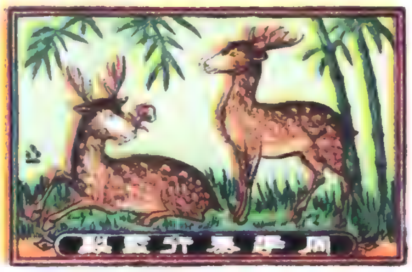
MEXICO


SMC
EL CONDOR
ESTANCO DE FOSFOROS ECUADOR

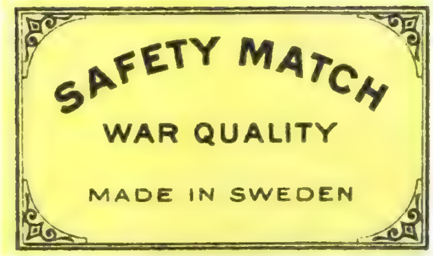
ECUADOR


THE MOTOR GIRL
SAFETY MATCH
MADE IN SWEDEN

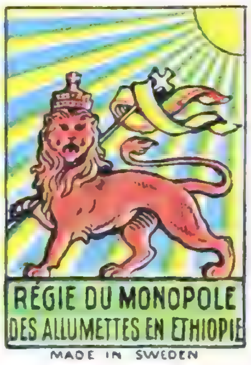
ENGLAND



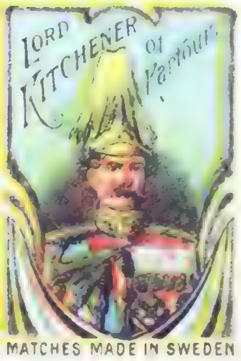
JAPAN


SAFETY MATCH
WAR QUALITY
MADE IN SWEDEN

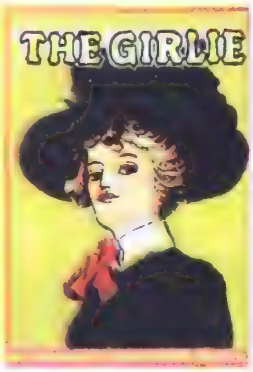
INTERNATIONAL


RÉGIE DU MONOPOLE
DES ALLUMETTES EN ETHIOPIE
MADE IN SWEDEN

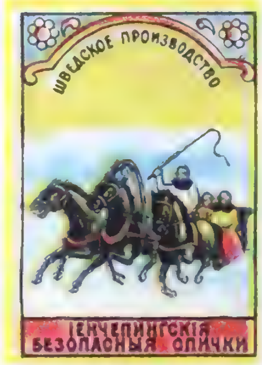
ETHIOPIA


LORD KITCHENER of Khartoum
MATCHES MADE IN SWEDEN

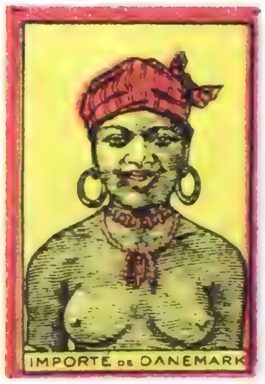
ENGLAND



ENGLAND


ШВЕДСКОЕ ПРОИЗВОДСТВО
ІЕНЧЕПИНГСКІЯ
БЕЗОПАСНЫЯ СПИЧКИ

IMPERIAL RUSSIA

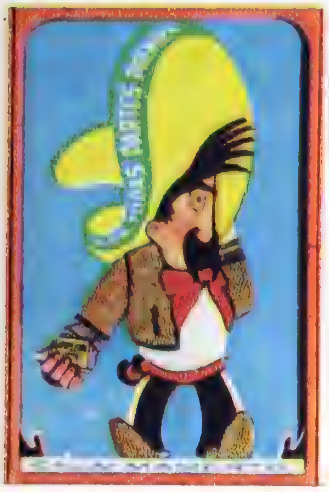

IMPORTÉ DE DANEMARK

AFRICA

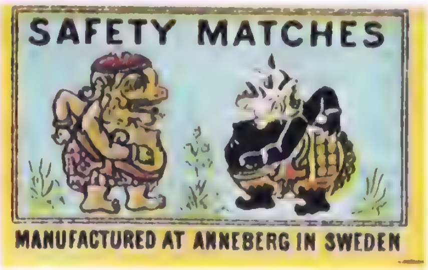
A NOT unnatural development of a philatelist's album would be the collection presented herewith. Nor would the collector of match boxes have an easy time gathering them. He might well have to travel to Siam or Madagascar, for there is no one spot where he could find them all. He would have to beware of innumerable imitations; he might get in trouble with governments and churches. After he had collected the 12,000 manufactured by the Swedish Match Company and its allies, and others made by Japanese and Mexican companies, he might, if he wished, start assembling the small books of matches widely used in the U. S. as an advertising medium. But it is doubtful whether his collection would ever be complete. The 500 boxes used in Japan are themselves an initial challenge.

It is of interest to the International Match Corporation to remain on good terms with the various governments which it has financed and which in turn have given it match monopolies. It is also of interest to it to remain on good terms with governments which it has never financed and where it has no monopoly although it is permitted to sell matches. No more charming way of keeping one's international frontiers all quiet and content could be discovered than the creation of the gay little covers pictured above.

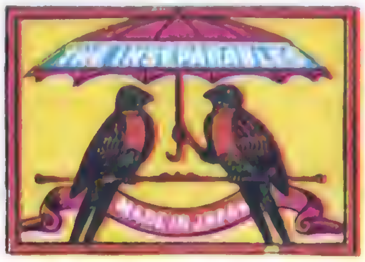
Help Keep International's Far-Flung Fences in Repair



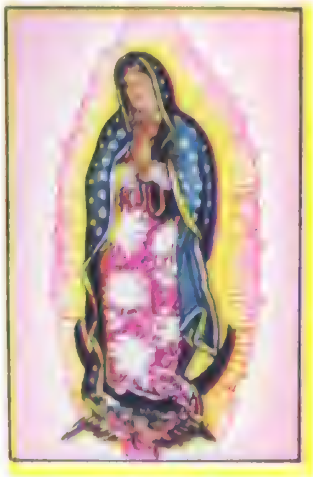
MEXICO


SAFETY MATCHES
MANUFACTURED AT ANNEBERG IN SWEDEN

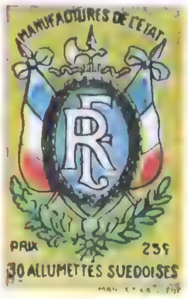
DUTCH EAST INDIES


THE INSEPARABLES
MADE IN JAPAN

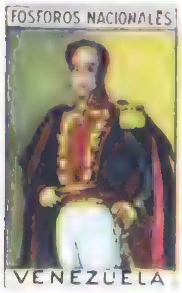
JAPAN



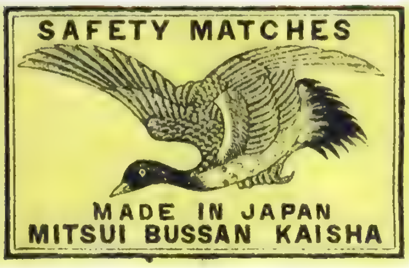
MEXICO


MANUFACTURES DE L'ETAT
RF
PRIX
25c
30 ALLUMETTES SUEDOISES

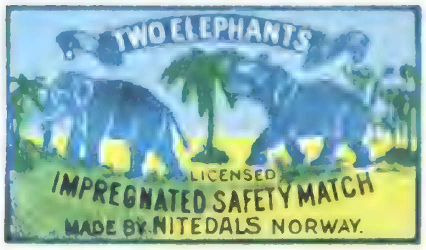
FRANCE


FOSFOROS NACIONALES
VENEZUELA

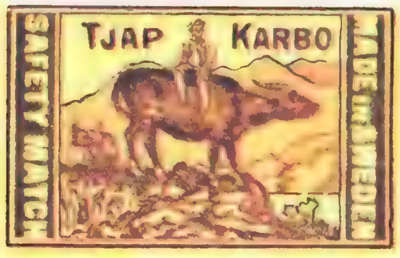
VENEZUELA


SAFETY MATCHES
MADE IN JAPAN
MITSUI BUSSAN KAISHA

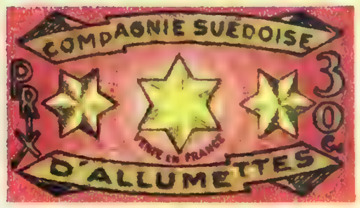
JAPAN


TWO ELEPHANTS
LICENSED
IMPREGNATED SAFETY MATCH
MADE BY NITEDALS NORWAY.

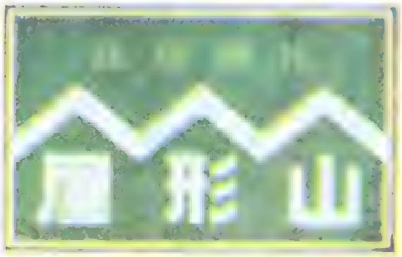
ENGLAND


TJAP
KARBO
SAFETY MATCH
MADE IN SWEDEN

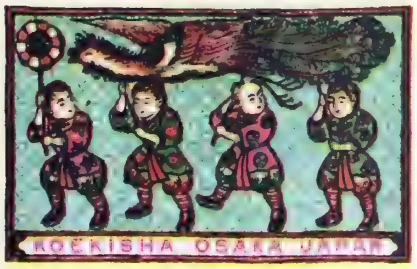
DUTCH EAST INDIES


COMPAGNIE SUEDOISE
PRIX
30c
D'ALLUMETTES
VENTE EN FRANCE

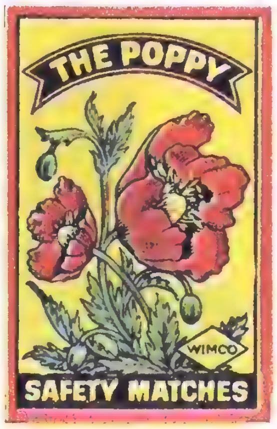
FRANCE



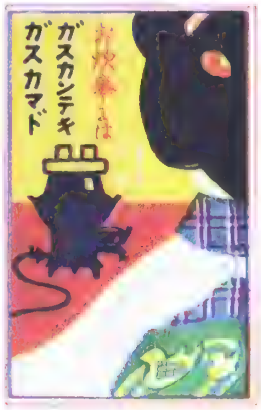
JAPAN


KOEKISHA OSAKA JAPAN

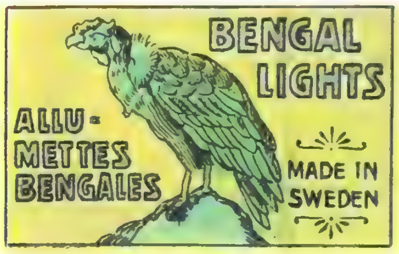
JAPAN


THE POPPY
WIMCO
SAFETY MATCHES

INDIA


お炊事には
ガスカンテキ
ガスカマド

JAPAN


BENGAL
LIGHTS
ALLU-
METTES
BENGALES
MADE IN
SWEDEN

EUROPE

For governments are occasionally quite sensitive about the covers which appear on match boxes. There is the story of an African prince who asked that the picture of his favorite mistress appear on the match boxes of his principality. The International Match Corporation thought, however, that the effect might be demoralizing to certain of the young girls who worked in the match factory. A compromise was reached, and the prince finally declared himself satisfied with only the head and bust of his smiling Ethiop favorite, whose charm is readily apparent on the opposite page.

Occasionally the covers are topical, like the Motor Girl or the picture of Lord Kitchener. Occasionally they are illogical like the cover, widely sold in China, reproducing the coat of arms of the Isle of Man (the three legs), or El Condor, sold in Ecuador although the condor is the national bird of Chile. Occasionally they are apologetic like the War Quality cover, which explained the temporary inferiority of the matches.

The Catholic Church had occasion to object to the picture of the Virgin of Guadalupe. The matches contained in the box made by a Mexican company were waxen, and it was a custom after one had

[*Continued on page 102*]

From Currency to Commodity

Is the downward path silver is taking these days. Single-handed, Chimanram Motilal cornered the Bombay market last winter. But his feat was insignificant viewed against its background: the lowest prices for silver in recorded history, the final decline and fall of what was once gold's partner, the buying power of 500,000,000 people cut in half.

CHIMANRAM MOTILAL is a Marwari Hindu, and exceptionally honest for a Marwari. He is one of the two men who have cornered the Bombay bullion exchange, which takes the place of the stock market in Indian economic life. The other man was Chunilal Saraya, ambitious and daring head of the Indian Specie Bank, who began a campaign in 1910 to corner the *world* silver market. For three years he accumulated silver, engineering several profitable corners for delivery on the Bombay market during the period. Disaster finally overtook him, and his bank closed its doors with $15,000,000 worth of silver still on its books.

Mr. Motilal, so far as is known, has no ambition to corner the world supply of silver. He seems quite content with his little *coup* last January on the Bombay market. The situation was tempting. Prices had been sharply depressed for several weeks, and many a shrewd bullion broker was selling short in the expectation of still lower prices. This expectation was correct: silver was destined to go considerably lower. What the smart brokers did not foresee was a sudden and disconcerting leap in prices that was to interrupt this downward progress. They did not realize that the same individual was the buyer in most of their short sales, that old Chimanram Motilal was risking his fortune of 40,000,000 rupees (about $14,600,000) to corner the market. For half a week he bought—2,000,000 ounces of spot at forty-three and seven-eighths cents, and 4,000,000 ounces of futures, more silver than could be found in the entire Bombay market. Such quantities of silver had to be imported from London, Shanghai, and other markets. But it takes time to import, as Mr. Motilal well knew. Unhampered by any polite New York Stock Exchange rules as to the treatment of shorts, he took full advantage of his corner, squeezed the unhappy short interest in every manner his ingenuity could devise.

Mr. Motilal's operations in the silver market have been uniformly successful, except for a certain little business at Nagpur some years ago about which he does not care to talk. He does not consider silver's immediate future encouraging, and he has gone so far as to predict that silver will probably reach the level of baser metals. In person, he is a fine-looking man of sixty-seven, of a rather serious turn of mind. Though he has had no formal education, he speaks Hindustani, Bengali, Gujarati, and Marathi. He has never been outside of India, which may or may not have something to do with the fact that he is an ardent supporter of Gandhi. His usual costume is based on a pink silk puggree wound about his head and a white loin cloth. He carries a gold-banded Malacca cane and wears no socks. When he draws up to the exchange in his Cadillac, the brokers, in wrinkled white duck suits, stop their bargaining to look at the old man who was once their master and may be so again. But Chimanram Motilal—Cadillac, cane, loin cloth and all—is dwarfed to a mote by the implications of what is happening today in silver.

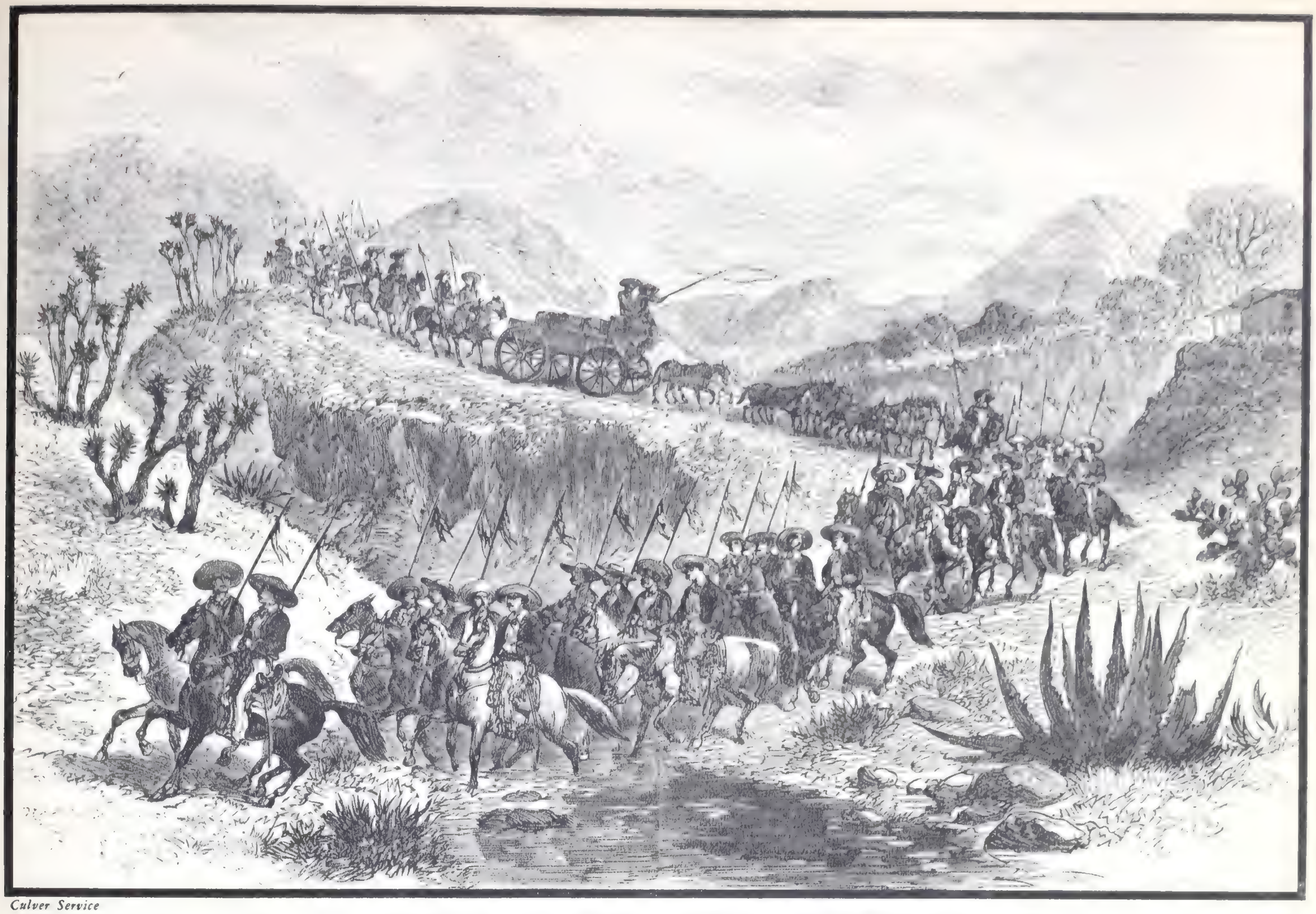
On June 21, 1930, silver sold at thirty-three and one-quarter cents an ounce, a quotation lower than any previously recorded in the history of mankind. This was the lowest point of a steady decline that began in May, 1928. How great has been silver's fall appears from the fact that in the time of Alexander the Great ten ounces of silver were worth one ounce of gold, while today the ratio is over fifty to one. As silver dropped lower and lower this summer, making many new all-time lows on the way to thirty-three and one-quarter cents, people began to realize what economists have long accepted as a truism: that silver is no longer on the same plane as gold, that it is rather a commodity like rubber, wheat, or copper.

Relative, not absolute

There are many commodities. There is only one currency, for Western nations at least, and that is gold. The "price" of gold is the same in London as it is in New York, the same today as it was yesterday and will be tomorrow. Take an ounce of gold to the Treasury at Washington and you will receive $20.67 for it. The Royal Mint or the Bank of France will give you exactly the same price for your gold. Anywhere, at any time, an ounce of gold is worth $20.67, or rather it *is* $20.67. For gold is not valued; it itself is value. It is not bought; it buys. Time was when silver was the same, when a pound sterling meant a pound of silver and not 7.322 grains of gold. But silver has fallen from its high estate: its price is not absolute but relative to the absolute. Only gold, in the new economics, remains absolute.

As a commodity, silver is bought and sold. Its price goes up or down in sympathy with other commodity prices. But silver's actions as a commodity are complicated by the fact that it was not so long ago used as currency everywhere and that it is still so used by half the population of the globe. When one looks for the causes of silver's contemporary decline, it appears at first glance that supply has not increased nor demand decreased. India and China continue to absorb three-quarters of the world's annual production. Nor has production risen appreciably: in 1913 it was 223,000,000 ounces; 1925: 252,000,000 ounces; 1929: 256,000,000 ounces. It is true that this production cannot easily be reduced because of the unhappy fact that most of the world's silver is now produced as a by-product from the mining of other metals. But production is certainly not increasing fast enough to cause any decline in prices.

The disaster that has overtaken silver of late is intimately,



Culver Service

Time was when this cavalcade of *caballeros* escorted the silver bullion from the great Real del Monte mines into near-by Mexico City. Among silver consumers China and India are preëminent; among silver producers, Mexico. Most Mexican silver is obtained from silver mines, which is only noteworthy because most of the world's silver is not. Like many another Mexican silver mine, Real del Monte is at present shut down. This does not mean, however, as has been assumed more than once, that Mexico is cutting down on her silver production. The fact is that the companies are merely concentrating on their more productive mines, from which they are taking out more metal than ever. The monthly average of Mexican production is about the same so far this year as last.

intricately, and inextricably bound up with the complex business of currency. So infinite are the ramifications of this business that the space allowable for a magazine article permits little more than their statement. No two economists will agree upon the relative weight to be attached to the incidents of past and present currency history. And while the immediate background of the silver situation can be placed within the last few years, its ultimate antecedents are to be found at the beginning of trade.

By 1900 the currency of practically every important occidental nation was on a gold basis, and silver had become merely a commodity used in currency, not currency itself. Today, silver is scarcely that. In 1920 the United Kingdom began to debase its silver currency, which means that the mint reduced the quantity of silver in shillings and other coins from more than 90 per cent to exactly one-half. France and Belgium followed suit in the next year. Coming at a time when silver, in sympathy with its fellow commodities, was slipping rapidly downhill from War prices, these acts turned silver's retreat into a rout. Not only was much less silver needed for new currency, but also the debasing of already existing coinage threw great quantities of silver on the market. Even more important has been the Indian government's constant selling of its silver stocks, of which more later. From these sources 105,000,000 ounces were added to the world supply during 1928 and 1929. Debasing of currency, selling of governmental stocks—these are some particular factors in silver's decline. More general causes are, first, that other commodities have been steadily falling and, second, that the two principal consumers of silver are experiencing hard times.

For half the population of the globe, silver has become a commodity. For the other half, who live in China and India, it has largely kept its status as currency. In the Far East, then, whose economics are still based on silver and which absorbs 75 per cent of the world production of the metal, lies the crux of the silver situation. The trade balances of India and China are probably the most important primary influences on silver prices. When they are swelled by prosperity, the West can dispose of more of its silver (over 75 per cent of the world's production is mined in North America), and silver prices rise. When the East is ravaged by war and famine, it can absorb less of the West's silver, and prices fall. On the other hand, oriental trade balances themselves are greatly affected by the price of silver—though here a most important distinction must be drawn. India is officially on the gold standard, which means among other things that she settles her international trade balances in gold. Hence the fluctuations of silver, theoretically, do not affect her buying power. But the masses of her people still regard silver as the basis of value and have accumulated vast hoards of that metal. Until these accumulations cease, the real buying power of the Indian people will depend somewhat on silver prices. China is the great sufferer from any decline in silver prices, however, for China is, both officially and unofficially, on the silver standard. In addition to the usual fluctuations in a nation's currency, China is further embarrassed by a fluctuation in the value of the metal on which her currency is based, so that the state of the silver market determines how much the Chinese merchant must pay for the Lancashire cotton cloth or the Pacific Coast flour he imports. The current decline in silver, which found prices around seventy cents per ounce and has reduced them to about thirty-five cents, might be said to have cut in half the buying power of China's 500,000,000 inhabitants as far as world trade is concerned. Actually, this is only one of the factors which have curtailed Chinese purchasing power. Had political conditions allowed a normal trade in silk, for example, China would have been able to pay for more imports.

Silver in India

If every person in India bought an ounce of silver every year, the price of silver would soar. For there are 320,000,000 people in India, as against a world output last year of 311,000,000 ounces of silver. Every one in India would undoubtedly like to buy an ounce of silver (or more) *per annum*, for every one in India is as excessively fond of silver as Chimanram Motilal showed himself to be last January. They are so fond of silver that they wrap it around their sweetmeat *pan soopari* and eat both candy and wrapper with relish. The dusky limbs of many an Indian woman are encircled with countless tinkling silver ornaments, anywhere up to ten pounds of them to each female. If family reverses come, silver is so universally admired and desired in the land that the wife becomes a walking bank account. She was literally so in India's days of free silver: her husband shipped the jewelery to the government mint and received in exchange as many bright new rupees as could be coined out of it.

But the British Raj closed the mint to free coinage of silver in 1893. And in 1926, on the recommendation of a Royal Commission, India's currency was put on a gold basis, which meant the demonetization of a monetary stock estimated at over $1,670,000,000. Ever since that time the government has been endeavoring to sell its vast stocks of silver and replace them with gold reserves. The process is not over: last year 35,000,000 ounces were thus sold. This year the government has refrained from such quantity selling (though a private sale of 15,000,000 ounces to the Hongkong Government was recently reported), and it may be that its great stocks will not reach the market for some time. The most severe blow at silver so far this year, and what is probably as responsible as any one factor for the recent succession of record lows, was the import duty of approximately ten cents an ounce decreed by the Indian Government last February. This move, which drove silver sharply down, obviously aims to keep as much silver as possible out of India. The country, indeed, seems to be saturated with the metal. In spite of the huge sales last year, the government stocks of silver have actually increased. However much the government may insist on the gold standard, the every-day business of India is still reckoned in silver and it is silver, not gold, that is paid into the banks in exchange for the new paper currency. Among all the conflicts of East and West which are tearing modern India none is more clearly defined than this attempt to enforce a gold standard on a people who think in terms of silver.

And in China

The Chinese are too sophisticated a people to hang silver bangles on their women. They import a great deal more silver than any other nation, and practically all of it goes into currency. Much of it, indeed, is imported as currency: the Mexican dollar is one of the most universally used Chinese coins. With India being prodded along toward a gold standard by the British, China shares with Abyssinia the lonely distinction of cleaving to the silver standard. It inevitably looms largest in any speculations as to the future of silver. After a year's study of Chinese currency problems, the Commission headed by Dr. Edwin W. Kemmerer, who is now occupied in extricating Colombia from its financial difficulties, has recommended to the government that a gold standard be adopted. Chinese economic opinion would seem to favor the gold standard. "So long as China remains on a silver basis," trenchantly declares Chang Kia-Ngau, general manager of the Bank of China, "she will be the sole victim of the violent fluctuations in the price of silver." Fortunately for the silver market if not for China, the Kemmerer Plan is at most a possibility. It proposes a currency of debased silver backed up by a gold bullion reserve, both of which are at present out of the question. The credit of the Nationalist Government is much too shaky for debased coinage to pass current among the people, nor is China in any position to build up a gold reserve.

Though China consumed more silver than ever last year, 136,700,000 ounces, even her voracious appetite for the metal is approaching satiety. Silver stocks at Shanghai, trade and banking focus of the country, have steadily risen from 147,195,000 ounces on January 1, 1929, to 192,388,000 ounces a year later and finally to the crushing total of 226,116,000 ounces at the end of last July. Though the civil wars are drawing some silver into the interior for the payment of troops, they are scaring much more into Shanghai for safekeeping. Last January a *Times* correspondent estimated that the banks in the International Settlement had lying idle in their vaults $200,000,000 in silver, most of which in normal times would be circulating in trade throughout the Yangtze River basin. Silver quotations are headline news in China. Merchants are refusing shipments, banks are closing, all because of silver. The government is worried about its heavy international obligations, which must be paid in gold. As a disrupter of trade many importers place cheap silver even before the unsettled political outlook, a view with which Minister of Finance, T. V. Soong, does not agree. Though he admits that the currency situation is "very serious," he adds: "If China can enjoy peace, allowing trade to flourish, the dollar crisis will disappear. But if more wars arise, the future is obscure."

Obscure, too, is the future of silver, perhaps happily so. The darkest clouds on the horizon are the huge masses of silver, considerably more than two years' production, with which the Shanghai market and the Indian Government are now burdened. These stocks must be disposed of sooner or later. Production does not offer much prospect either way: last June it was about the same as in June, 1929. The most hopeful item of silver news for the future, barring a possible return of peace and plenty to China, is the recent report that France is to replace its paper five, ten, and twenty franc notes with silver coins. Since these are to be issued up to 3,000,000,000 francs worth, considerable quantities of silver will be needed. Now is certainly the time for France shrewdly to buy back at much lower rates some silver she has been selling from her debased coinage.

There Are No Automobiles

The explanation of this paradox involves the passing of the horseless carriage. What Messrs. Zeder, Skelton, Breer, and other automotive engineers are thinking about.

A CLOSET full of electric horns squawking like a lot of furious mechanical infants until they are all squawked out. A machine patiently brushing a piece of fabric until it is worn threadbare. A dazzling light shining on another piece of fabric until it fades.

Sights and sounds like these are familiar in Chrysler Corporation's five-story engineering building in Detroit, over which reigns with formidable energy Fred M. Zeder, Chrysler's powerful vice president in charge of engineering. Foremen of machine shops or nervous exalted inventors of new devices who try to impress Mr. Zeder have long since discovered that temperamentally he is a Missourian. All material, devices, or parts which he accepts he tests and retests; in fact, he generally breaks. Flywheels offer an example. Mr. Zeder and his colleagues have a predilection for taking a flywheel and depositing it in a device covered by protective armor plate and capable of turning it 20,000 R.P.M. (few automobile motors ever turn up more than 4,500 R.P.M.). Some time before the maximum is reached, centrifugal force bursts the wheel asunder. Mr. Zeder studies the condition and nature of the breakage and draws conclusions therefrom. Conclusions which sometimes annoy the production department. Or else conclusions which Mr. Zeder does not bother to impart to anyone, but files somewhere as data to be referred to later.

Mr. Kettering of General Motors or Major Vincent of Packard apply the same treatment. The better automobile manufacturers are now thoroughly infused with the laboratory spirit. They test materials exhaustively before deciding which to use. Compact and advanced, the Chrysler laboratories serve as an excellent example. To appreciate their significance it is necessary to realize that the early development of the automobile was tentative and groping. In the beginning a rudimentary gasoline motor was rigged up to propel a buggy, the entire contraption being referred to as a horseless carriage. But it had a whip rack, just in case the motor broke down and Dobbin had to be pressed into service. For years automobile manufacture has been only a more confident extension of this early process. Body designers have retained many of the features of horse-drawn vehicles—obviously, in the sense that the formal town car or limousine suggests the victoria or landaulet; more subtly, in the sense that the general contours of the automobile, instead of being adapted to the rapid pace which is its distinctive contribution to private travel, are still vestiges of the leisurely equine era. Of this, more anon.

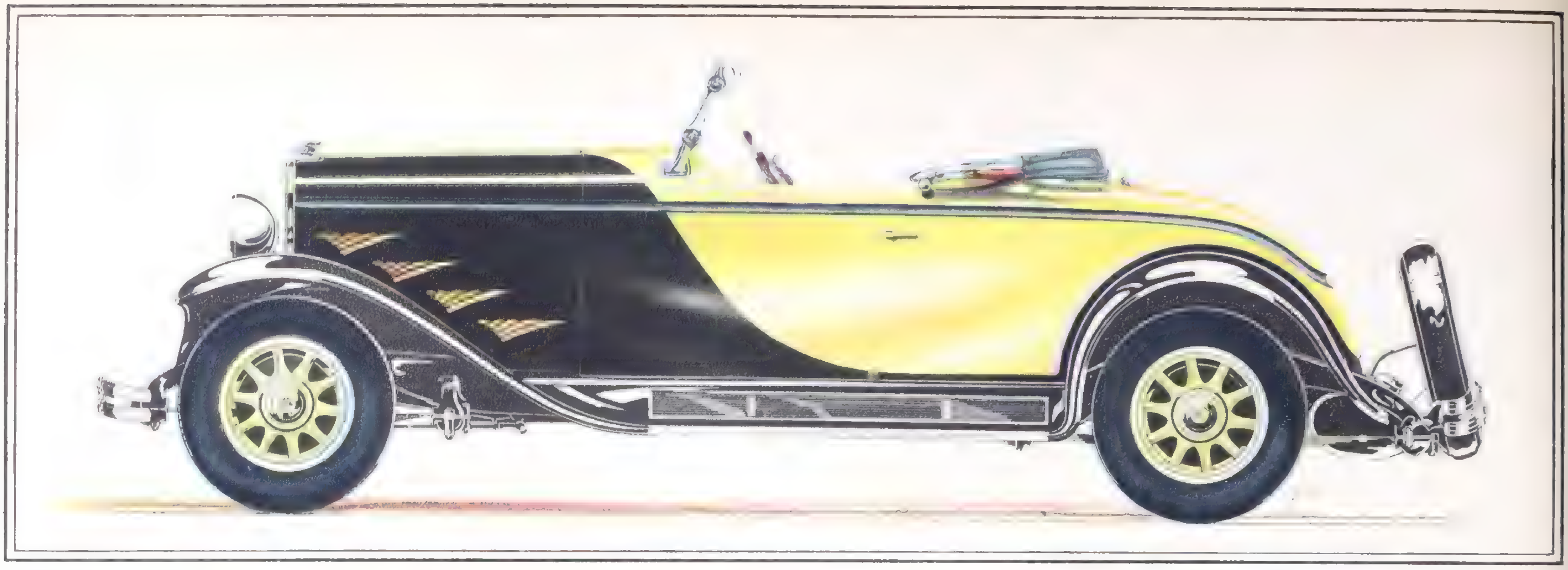
Mechanically, the progress of the automobile has also been hesitant. Any smart mechanic could contrive a gasoline engine which will work, but only an engineer could produce one whose operations are really admirable. The infancy and adolescence of the automobile were entrusted to mechanics whose care of their charge was usually desultory and sometimes approached cruelty. Occasionally someone who by academic standards was only a mechanic proved himself of high engineering calibre.

But for the most part the automobile has been in less astute hands. Mr. Zeder tells a story which exemplifies the groping methods against which his laboratory is mobilized. A firm with which he was formerly employed once devised a lubrication system which looked well on paper; no attempt was made to check it in the laboratory. When the cars were built, grave deficiencies were apparent. A simple motor, equipped with glass walls, revealed that the lubrication was a fiasco. Shortly after this, a rival manufacturer displayed his new models. When Mr. Zeder's firm tore them down for inspection, the engineers found an exact copy of their own faulty system.

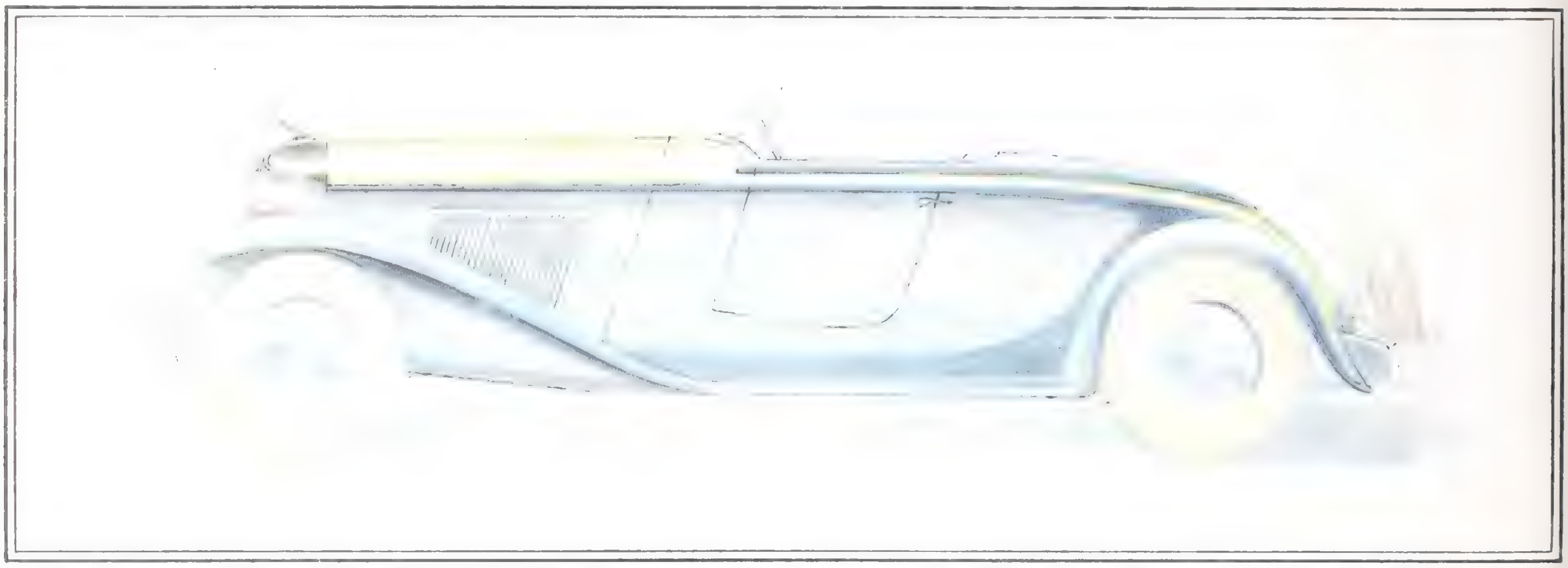
This example is by no means archaic; plenty of gullibility still exists in the automobile industry. It is a prodigious job to treat an automobile as a laboratory subject, a job possible only to the most prosperous corporations. Yet the laboratory is a necessity for any automobile manufacturer who expects to compete with the best. Chrysler Corporation's engineering plant employs some 300 skilled men and hundreds of costly devices, neither men nor machines having anything to do with the actual building of Chrysler cars. There are necessarily many college graduate engineers. The ultimately efficient automobile cannot be built without the use of such abstruse subjects as thermodynamics (science of heat) and no mere garage mechanic, be he a wizard at automobile diagnosis and repair, knows anything about thermodynamics. For that, he must go to school and keep going to school. Of Chrysler's engineering triumvirate, Vice President Zeder worked his way through the University of Michigan, his brother-in-law, Executive Engineer Carl Breer, went to Leland Stanford, and Ohio State graduated Executive Engineer Owen R. Skelton. A key to the attitude of these men is the fact that they are fond of comparing their endeavors to those of their friends, the Mayo brothers. And with truth: no Mayo investigation of the respiratory system is more searching than the delicate examinations conducted by Chrysler experts to determine the best honeycomb radiator pattern. As the Mayos study the effects of exercise on the human system, so a Chrysler chassis is studied on an apparatus nicknamed a "Belgian Road" (Belgian cobblestones are notoriously bumpy), which gives it several months of jiggling and jouncing in a few days. As the Mayos hearken to every whisper of a patient's heart, the Chryslers employ the hypersensitive oscillograph, which makes sound waves visible in light lines as they are produced, to locate the causes of such elusive annoying sounds as those produced by a motor fan. And on the hottest days of a Detroit summer it is by no means unusual to find Chrysler men, fur-coated and gloved, in a room kept at below zero temperatures, working on devices to aid cold weather starting and operation.

The laboratory is the one branch of the automobile business where there is not much talk about fluctuations of trade, depressions, and inflations. In the first place its occupants, like all men of science, are seldom fired with great financial ambition. There are men in the Chrysler laboratories whose detached absorption in research undoubtedly approaches that of biologists or historians. They labor toward perfections whose approach, unlike sales statistics, cannot be stimulated or forced. Finally, they live perpetually in the future—that future toward which their experiments are tending. The early mechanic, preoccupied with his awkward makeshifts, his haste to produce a salable vehicle, had neither the time nor the scientific training to get a perspective of the automotive trend. But Mr. Zeder can make a scholarly analysis of events to date and a learned prognostication for the future of design. This ability is perhaps the chief contribution of the laboratory method to automobile history.

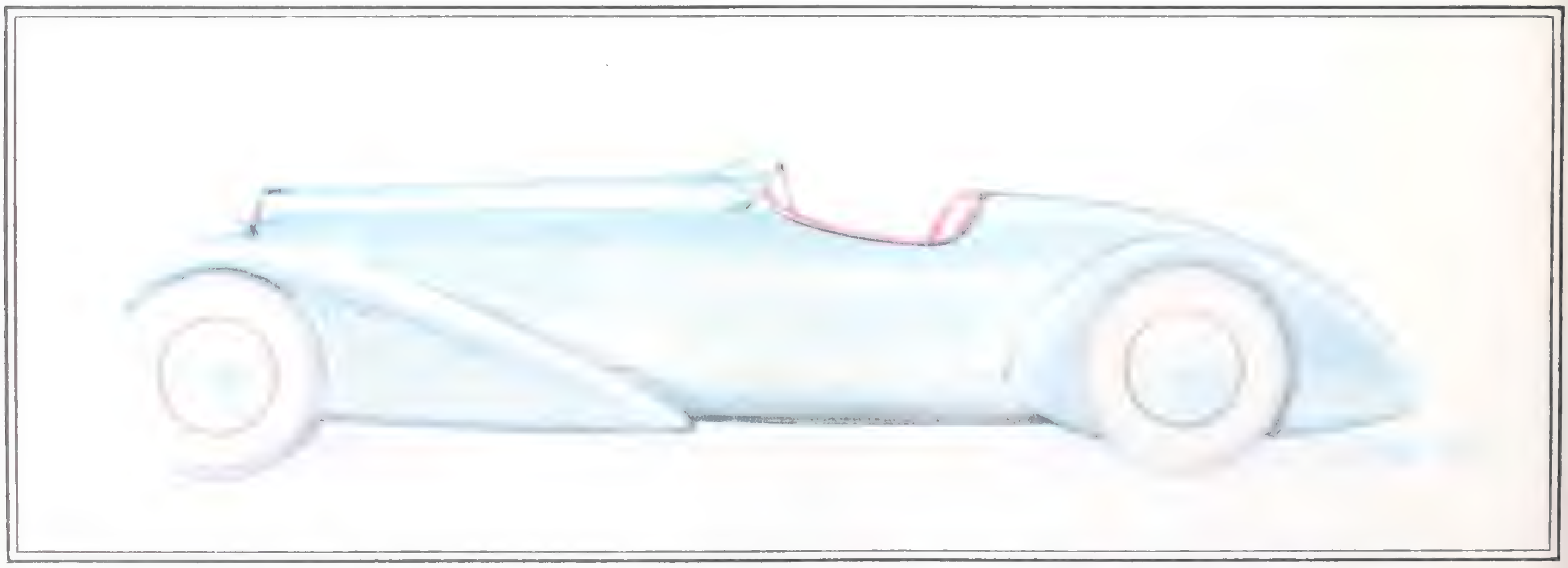
When the late Edgar Saltus was asked, "Do you think that Christianity is dying?" he is reputed to have replied: "I was not aware that it had ever been alive." Were someone to ask Fred Zeder if the automobile is dying, he might express a similar surprise to learn that it had ever existed. For by an automobile Mr. Zeder means a vehicle ideally adapted for propulsion by machinery. And vehicles of this sort are as rare as good Christians. To Mr. Zeder's foreboding, scientific eye, the present still belongs to the



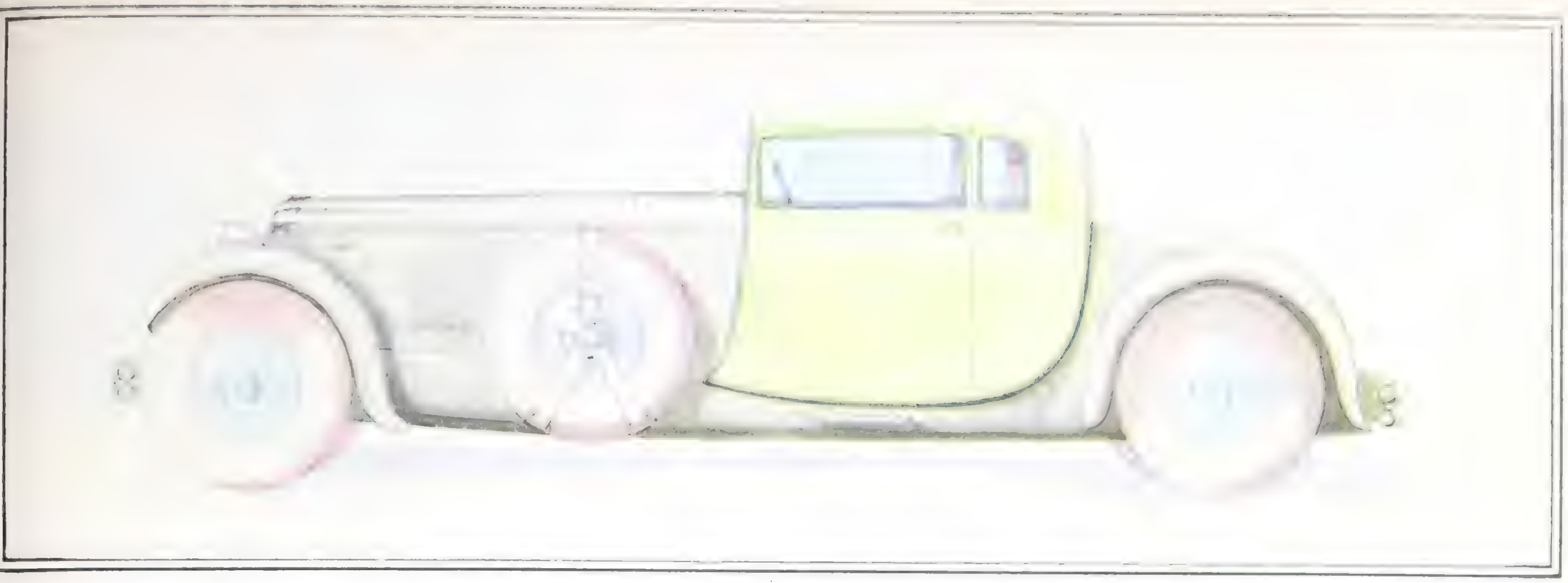
Between an old model and a new one are innumerable drafting room experiments. As the research pathologist tests varieties of medicine, so the automobile designer tests varieties of contour. Above is the old Chrysler roadster. On the bottom of the opposite page is . . .



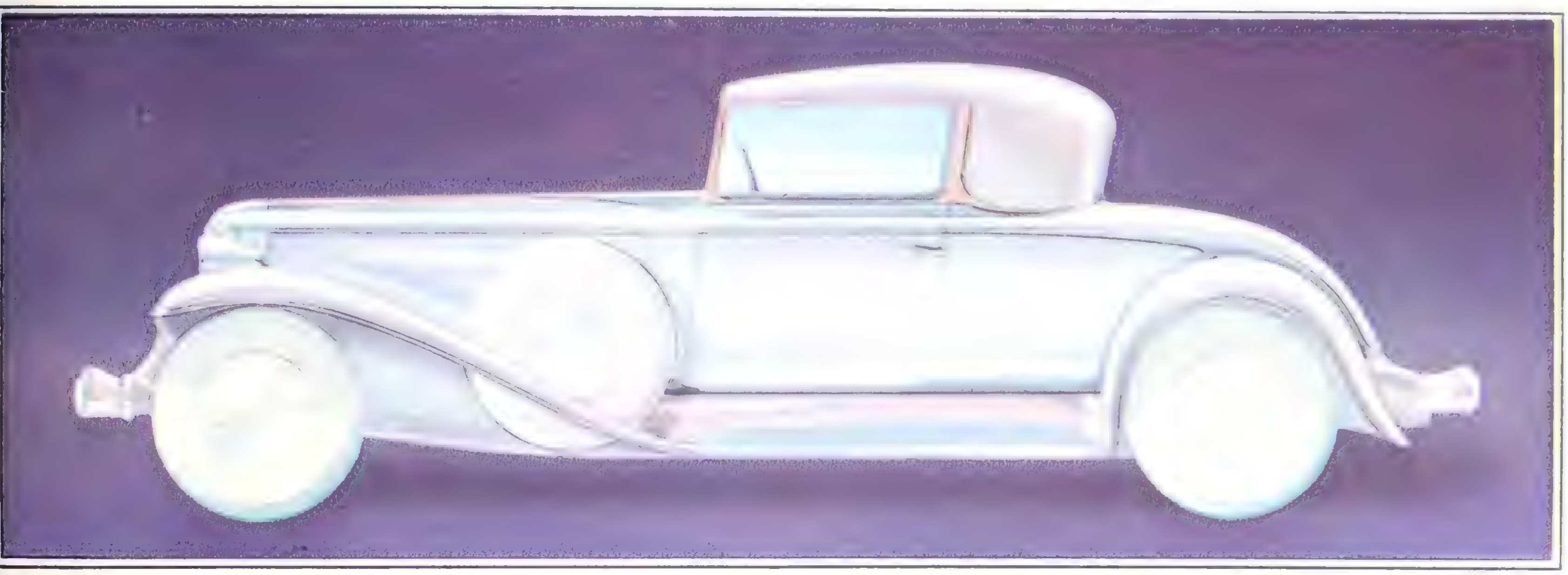
. . . the new Chrysler roadster. Between are several of the innumerable experiments. Some of them are impractical because they are too radical to suit the present public taste, others merely dissatisfy their creators, still others would require changes in manufacturing equipment which Chrysler is . . .



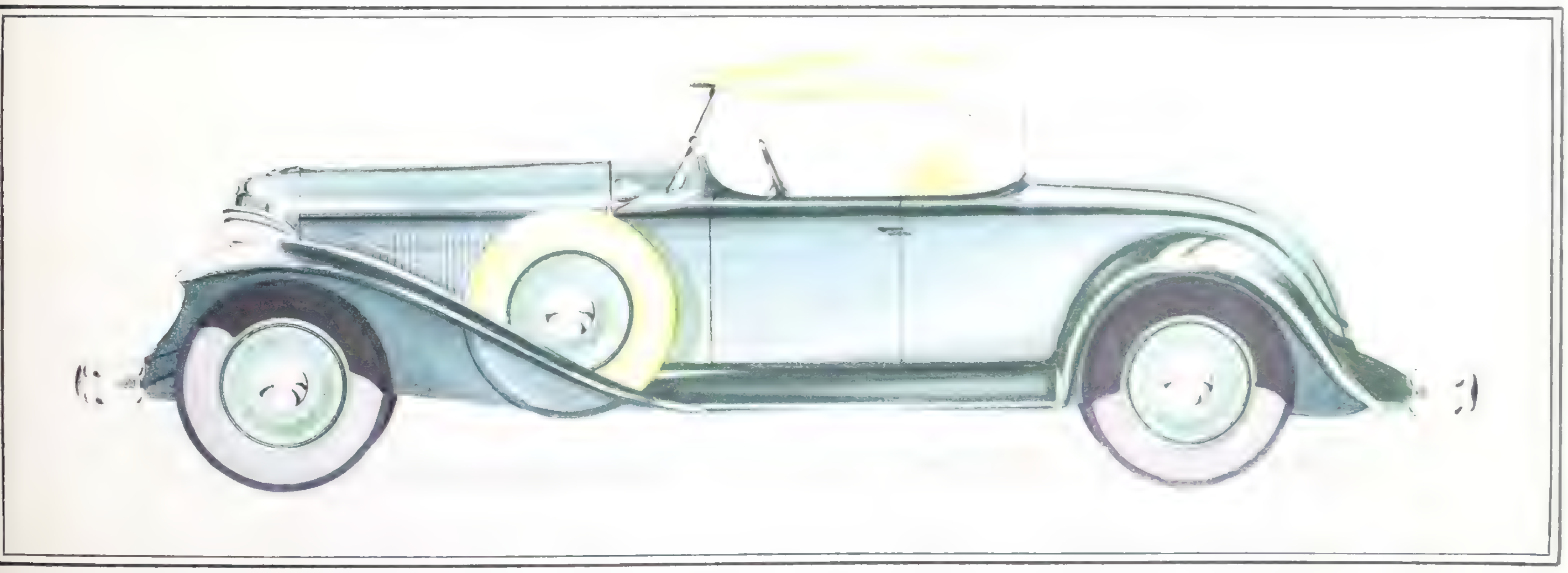
. . . at present not prepared to make. They are, however, by no means without value. Mr. H. V. Henderson, head of the Chrysler art department, directs the labors of numerous draftsmen who must be able not only to render sketches but to present them in the form of mechanical drawings.



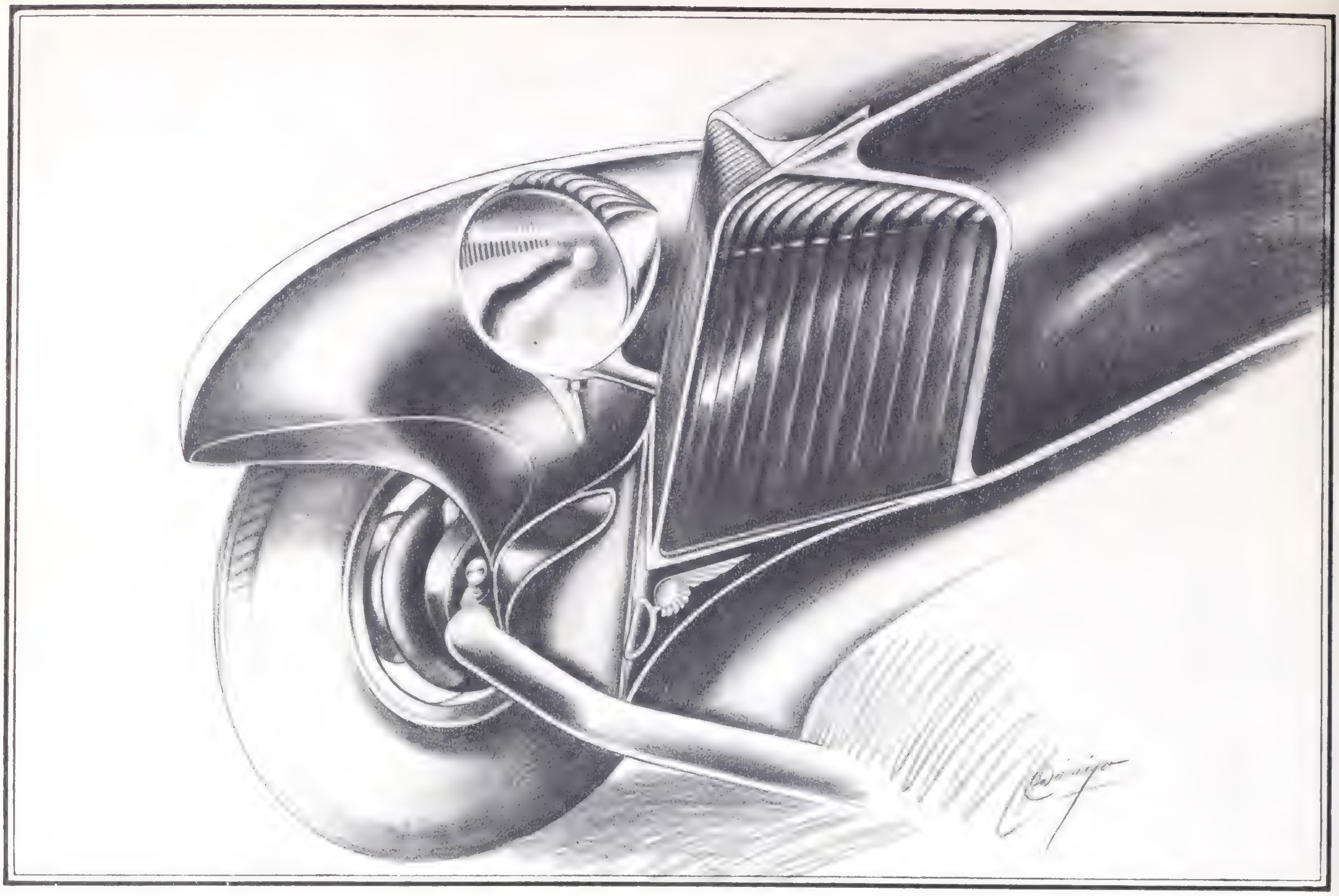
Thus Mr. Weissinger, whose radiator designs appear on a following page, is not nly able to depict a wind-blown nymph for the adornment of a radiator cap but can illustrate the nymph's graces in terms which a metal worker can understand and proceed to embody in chromium-plated steel . . .



. . . The medical parallelism holds true throughout; just as one man specializes n bacteriology, another in endocrinology, another in histology, so one of Mr. Henderson's staff is an adept in the design of such details as door handles and dashboard instruments, another . . .



. . . in over-all body design, another in color application. With the increasing use of aërodynamic principles in body design, the invitation of the automobile industry to the creative designer, who must correlate art and science, should be more urgent than ever.



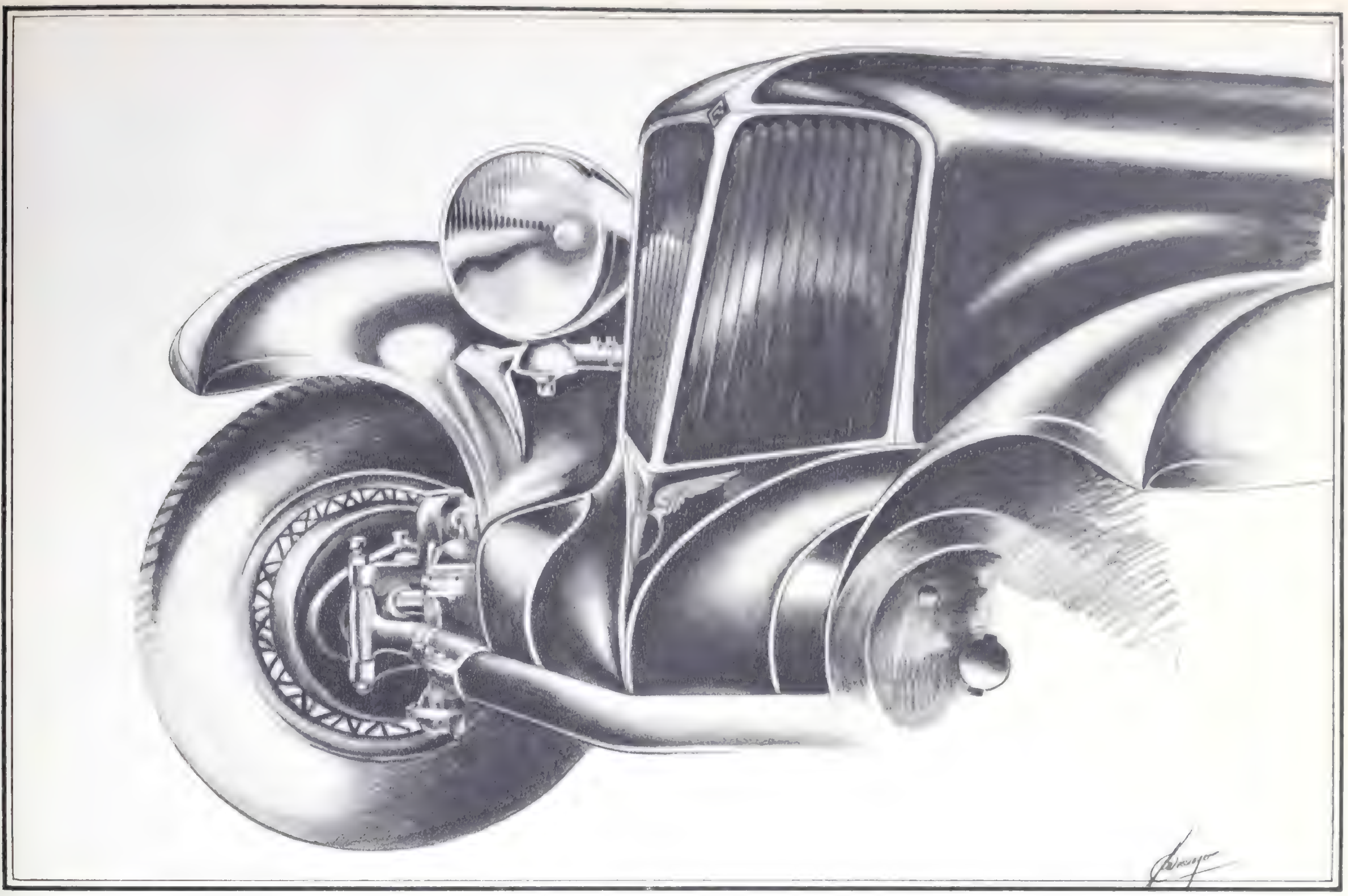
To many, the automobile may be prosaic, but men who plan them often regard them as opportunities for exciting, vital design. On these pages are drawings with the visceral quality of anatomical charts, from the vigorous pencil of Herbert Florian Weissinger of the Chrysler art department. As energetic abstractions, they might stand by themselves. Actually they are tentative suggestions, working toward a new Chrysler radiator.

horseless carriage; the automobile belongs to the future. Through his eyes it is possible to glimpse what this new vehicle, the automobile, will be like. No one can be sure, but certain generalities may be predicted. Motor car comfort has already been highly developed, although it is only reasonable to expect that the present best in roominess, ease, and convenience will gradually be exceeded. Mechanically such laboratories as Mr. Zeder's would seem to be progressing rapidly toward a point where further improvement will be appreciable only to the engineers themselves. To be sure, principles like the front drive (Cord, Ruxton) and free wheeling (Studebaker) are in their infancy. They are the most radical developments since the self-starter and perhaps highly potential. But it is unlikely that automotive mechanism will grow vastly more economical or efficient. For one thing, the average motorist demands a car which will beat his neighbor's at the traffic lights—in other words, which has power on demand. And the engineer inevitably gets power at the expense of economy. Were it not for this power craving, he could produce cars capable of economic feats as yet unknown. But he does very well as it is with economy, efficiency, comfort, and appearance. In other words, the horseless carriage has reached a splendid prime. It is quite old enough to stop being a horseless carriage and become an automobile. Therein lies the chief opportunity for the future.

Theoretically we may say that the difference between the horseless carriage and the automobile is the difference between a carriage independent of animal locomotion and a vehicle specially designed to make the most of mechanical locomotion. Actually, the motor car of today is somewhere between the two. It proceeds at a pace which would have scandalized the carriage age. It provides greater comfort at high velocities than the carriage did at its jog trot. Often sleek and trim, it makes certain attempts to express its natural pace. But it is still a job of coachwork placed upon a chassis, with little attempt at integration. And despite the fact that its fundamental problem is passage through air resistance, a problem which the leisurely carriage never encountered, it has never met this problem squarely. Mr. Zeder points out, for instance, that the car of today would be faster if designed to run backward. And in the carriage era it was logical to place the horse before the cart. In the horseless carriage era this principle persists, with the engine before the tonneau. But the automobile era threatens to change things. The automobile will essentially be a projectile. Fortunately, the experience of aviation engineers, who *had* to meet the air resistance problem, is now available to the automobile men.

The triumvirate

About the Chrysler Corporation one says Zeder, Skelton, and Breer with as much ease and familiarity as one in the clothing trade might say Hart, Schaffner, and Marx, or one on the stage think of Ethel, Lionel, and Jack. In 1921, in Newark, New Jersey, Mr. Zeder was president of the Zeder, Skelton, & Breer Engineering Corporation, which was the first public appearance of the trinity although they had previously worked together with the Studebaker organization and also with Mr. Chrysler when he was vice president of the John N. Willys interests. The Maxwell Motor Corporation (later the Chrysler Corporation) eventually took over the engineering firm, and the triumvirate passed into obscurity as far as the public was concerned although for the automotive trade their importance seemed ever to increase. Of Chrysler products which have known their engineering touch, it is sufficient to list the Chrysler, Dodge, De Soto, and Plymouth cars, the Dodge trucks and busses, the Fargo commercial cars, and the



At right and below is Mr. Weissinger's sketch of the radiator which actually appears on the new Chrysler models. Above is another of his multitudinous and arresting suggestions. The artist is twenty-two, a native of Danville, Kentucky, the son of an architect and builder. He reached Chrysler after Center College and the Washington School of Fine Arts. His work strikingly exemplifies the industrial application of the method and viewpoint of fine arts.

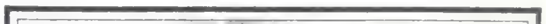
powerful, popular Chrysler marine engines.

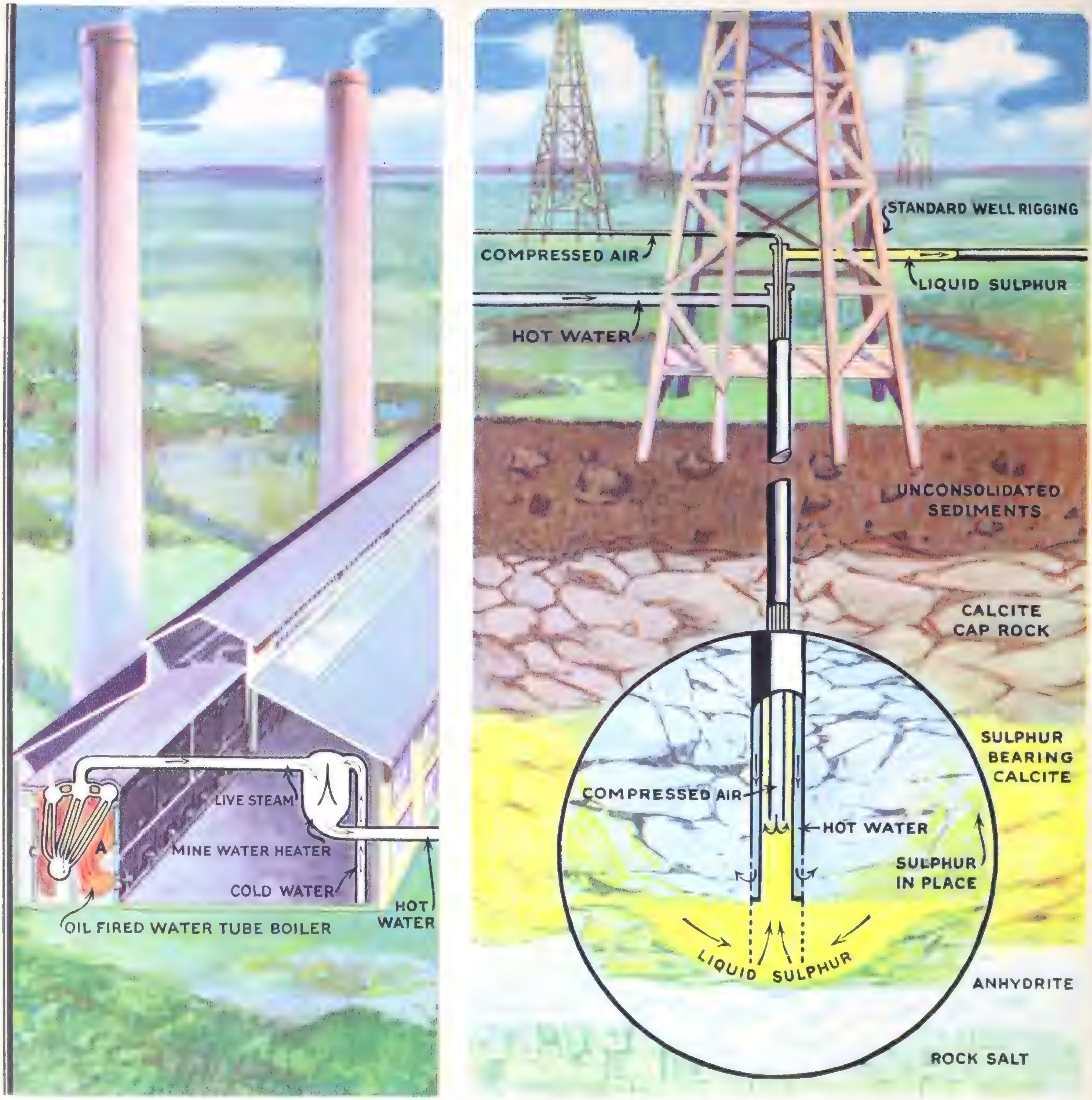
It is fitting to speak of them as a triumvirate because in private life as well as laboratory life the three are inseparable. They always lunch together. Their homes are not far distant. As is common with many engineers, they have no hobbies other than their occupation. For this reason one sees them night after night working in their laboratory, testing one never knows what fantastic invention, taking things apart, putting them together again. To them perhaps more than to anyone else in the company it is permitted to be idealistic because their job is to create and discover, and selling to them is only a minor consideration, anyhow, handled by another department.

To the lay eye it seems as if the job of these three men were primarily concerned with destruction. The "Belgian Road" machine hereinbefore mentioned serves as an excellent example. This machine is a platform on the top of which two sets of wheels revolve in opposite directions. The platform also has a motion similar to that of a camel's back when it walks. It is the especial delight of Messrs. Zeder, Skelton, and Breer to place an automobile upon this platform and watch it piteously disintegrate. The exact time at which a bolt drops off or a spring breaks is succinctly noted on a chart.

Nor do the experiments of the three allow them to lead sedentary existences. They themselves often take Chryslers on road tests (before the public was aware of the existence of the then new Chrysler Eight, sample cars had already done 200,000 miles of road tests with, as one Chrysler agent vastily put it, the "entire U. S. as a testing ground"). Favorite testing ground of the Chrysler Corporation is Ligonier, Pennsylvania, where are as rocky, sharp, and perilous curves and hills as anyone is likely to encounter. There is another school of thought, however, which holds that the best test of a motor is an Arizona desert. In either of these places one is apt to find occasionally either Mr. Zeder or Mr. Skelton or Mr. Breer.

Of the three, Mr. Breer devotes most of his energies to experiments with motors. Mr. Skelton at present devotes himself to bodies and chassis and is directly responsible for the spring and axle designs. Mr. Zeder is the head of the entire engineering organization. He it is who is most quoted, most mentioned. He is used to having unimaginative reporters ask what has been the greatest influence in his life. He always answers: "My Mother."




LIVE STEAM
C
A
MINE WATER HEATER
COLD WATER
OIL FIRED WATER TUBE BOILER
HOT WATER
STANDARD WELL RIGGING
COMPRESSED AIR
LIQUID SULPHUR
HOT WATER
UNCONSOLIDATED SEDIMENTS
CALCITE CAP ROCK
SULPHUR BEARING CALCITE
COMPRESSED AIR
HOT WATER
SULPHUR IN PLACE
LIQUID SULPHUR
ANHYDRITE
ROCK SALT

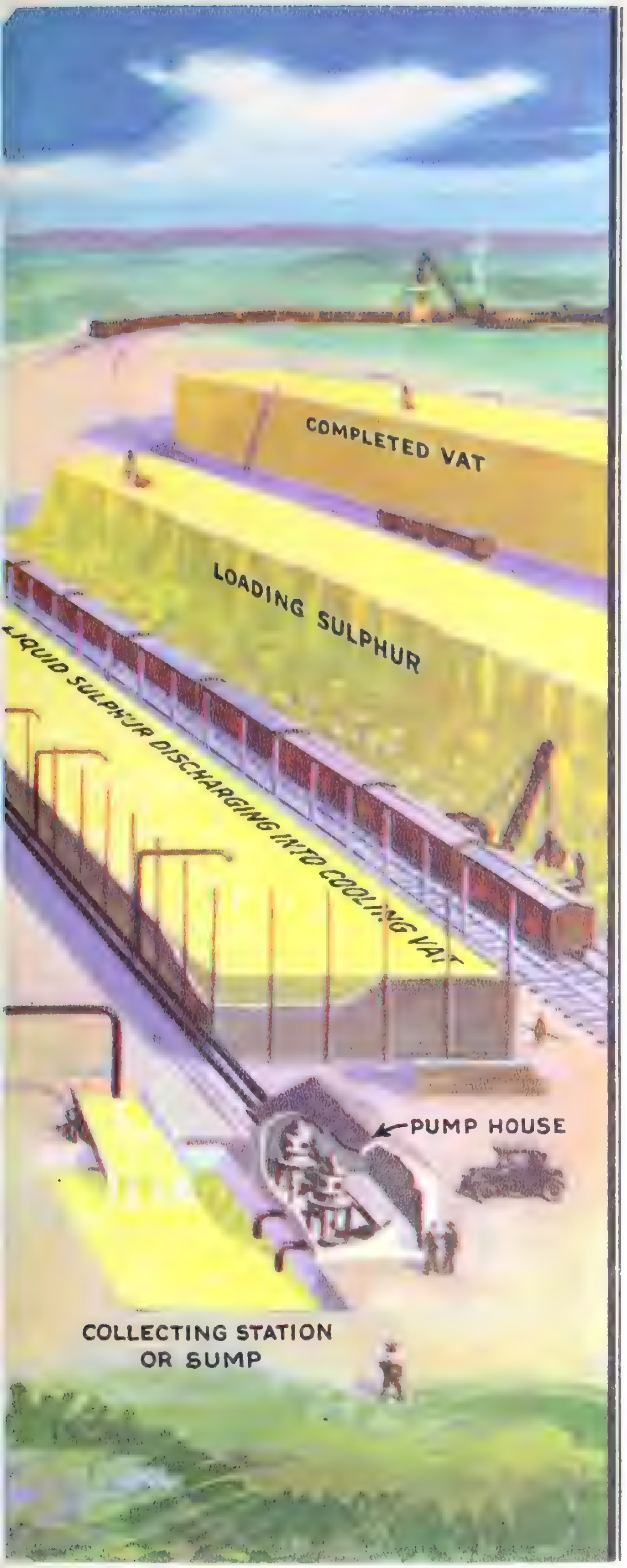
Courtesy of Texas Gulf Sulphur Co., Inc.

The Frasch Process

Probably the most efficient of all processes for extracting an element from the earth was patented in 1891 by Herman Frasch to mine the unique and enormous deposits of sulphur along the edge of the Gulf of Mexico. Without this process American sulphur could never have been recovered because the deposits are overlaid with soft sand and gumbo. On the other hand, the geological formations of all other sulphur deposits in the world make the application of the marvelous Frasch process impossible to them. The Frasch method is used by both the Texas Gulf Sulphur Co. and the Freeport Texas Co., world's largest producers. From vast blue reservoirs millions of gallons of water a day are heated (first panel) to 330 degrees Fahrenheit. Some 118 degrees above its boiling point the water is held in liquid form by a pressure of 110 pounds. Through a six-inch pipe (second panel) it is plunged into the earth to depths ranging from 500 to 1,500 feet. As water spurts from the vents at the bottom of the pipe, the rhombic sulphur into which the pipe has been driven is melted, sinks to the gypsum bottom. The head of water lays great pressure

Atom S

How he married Venus and was mistaken for the Devil. Of Herman Frasch, "the king of sulphur," and some modern aristocrats. And, particularly, of Texas Gulf Sulphur and Freeport Texas.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PUMP HOUSE
COLLECTING STATION OR SUMP

upon this liquid sulphur, which is forced up a three-inch pipe inside the six-inch water pipe. The addition of air under 500 pounds pressure pumped down a one-inch pipe in the center of the other two forces the sulphur to the surface and along steam-gutted pipes to a distributing tank (third panel). Here it first emerges to daylight. It is pumped to one of several bins, is thinly spread to cool and solidify. When the height of the bin reaches about forty feet, tracks are laid alongside it, the temporary boarding is removed, chunks of sulphur 99.5 per cent pure are blasted off and loaded into freight cars (fourth panel). At every step in this process the companies are roundly taxed by the state of Texas.

OBSCURE and hidden among the chemical elements is sulphur. Its atom, called S, plays such an important industrial rôle that the consumption of it has been taken as the yardstick of civilization; yet almost never is it seen, almost never credited with the fertilizers, newspapers, dyes, explosives, paints, fireworks, and rayon it brings into being. The automobile depends on Atom S for its lubrication, its battery current, its rubber tires. The mechanical refrigerator in the pantry uses Atom S to make ice. Atom S will fumigate, he will bleach, he will pickle steel. Upon your shoe polish, your rubber heels, your golf balls, your soap, your photograph, he has had his mysterious penetrating effect. The U. S. produced 2,362,389 long tons of him last year, had on hand last January some 1,900,000 tons—a vast yellow pile, so cleverly distributed through modern life as to be invisible to the millions who only know his name.

A dashing, romantic fellow, this atom, with a decidedly diabolical reputation, ever since the Chinese first used him to make black powder no one knows how many years B. C. Because he haunts volcanoes the Greeks knew him as Hephæstus, god of fire and the forge, son of Zeus and Hera, who were king and queen of the gods. In a dispute between his parents, Hephæstus sided with his mother, wherefore his father threw him out of heaven in a rage. Atom S fell for a whole day, landing on the volcanic island of Lemnos with such force that he was lamed forever. Lemnos became his particular home, though he might be found in the bowels of Ætna or Vesuvius or any other volcano, forging his wonderful chains and chairs for the gods. In the days of Rome he took the name of Volcanus or Vulcan; and not content with these somewhat Sabatinian adventures, and lame as he was, married Venus, the most lovely of creatures human or divine. Thus long ago was the art of manufacturing linked with beauty.

Meanwhile, in the land of milk and honey beside the Jordan, Atom S had been masquerading in quite a different guise. Here he was known as brimstone, a kind of divine purifying vengeance, akin to fire. Originally identified with the lightning, due to the sulphurous smell of electric storms, brimstone was frequently hurled from heaven by Jehovah upon unrighteous man; was later considered one of the elementary constituents of hell, its pungent odor and variegated flames feeding the imagination of writers on that dismal subject. Out of this grew the semi-mystical conceptions of the alchemists, who, observing the dramatic qualities of Atom S, thought that he represented the principle of combustibility inherent in all metals. He was therefore exalted to be one of the three primal principles of matter (mercury, sulphur, salt), and it was thought that in combination with his brother mercury (the cold silvery metallic principle) he could create gold. He was the "virtue of the world" inherent in every kind of matter, awaiting the Messianic touch of the chosen alchemical sage to set him free. To Geber (Arabian alchemist of the 8th century) is attributed the saying that sulphur "illumines all bodies, since it is the light of the light, and their tincture." Yet the hero was somewhat dangerous to experiment with because "his indignation gets the better of his discretion."

Scientists now believe they know what this romantic individual looks like. In the list of eighty-eight atoms so far discovered (out of a possible ninety-two) Atom S is number sixteen, which means that he is not as complicated as, say, Atom Hg (mercury), who is number eighty. Hypothetically, he is a solar system of things smaller than himself. At his center is a nucleus composed (so far as anyone knows) of eight units of helium and a few electrons, packed together in a space too small for reasonable figures, the whole having a positive electrical charge of sixteen. Around this nucleus whirl sixteen electrons, each with a negative charge of one. They whirl in three circles, and so fast that, notwithstanding the minuteness of their orbits, each covers some 1,400 miles every second. In the inner circle

Underwood & Underwood

THE WORLD-OLD SICILIAN SULPHUR DEPOSITS ARE MINED WITH PICKS AND HUMAN MUSCLES

there are two electrons, in the middle one eight, in the outer one six. Of all the electrons, those in the outer circle, called the valence electrons, are the most important to the romance of Atom S; it was with them that he made his awful smells for the alchemists, his explosions for the Chinese, and dramatized himself generally before the world.

His modern utilitarian career began when he was first used to make gunpowder or black powder in the 13th century. This is one of his simplest performances. Pure sulphur powder containing nothing but Atom S is mixed very closely with the saltpetre molecule KNO_3—one atom of potassium, one of nitrogen, and three of oxygen. Now to understand Atom S it is necessary to know that he has an unfulfilled desire. He has only six electrons in his outer circle, whereas no atom considers itself respectable unless its outer circle contains eight electrons. (The only atoms born thus are the "inert gases" like neon, argon, krypton, xenon, and these are the aristocrats of atoms and will combine with nothing.) Oxygen has only two electrons in its outer circle, and obviously by sharing their outer electrons, Atom S and Atom O can make for themselves a combined outer circle of eight electrons, and upon their eagerness to do this millions of America's industrial dollars depend. In the case of black powder, they may be encouraged to unite by the direct touch of fire (as when black powder was first discovered); or (as in modern times) by the impact of the explosion from a fulminating cap, itself set off by the blow of a hammer and trigger. By this latter method Atom S and Atom O are knocked closely together; thunderously they unite, the saltpetre molecule (KNO_3) bursts, and there is formed SO_2 (sulphur dioxide), an expansive gas, together with NO (a nitrous gas) and K_2O (oxide of potassium). Carbon (formerly in the form of charcoal) also plays a part in this reaction.

When enough sulphur atoms are collected into molecules to form a visible quantity of matter we have a nonmetallic, acid-forming element—bright yellow, brittle. It is not soluble in water, and it melts (fortunately for industry) at about 239 degrees Fahrenheit. At 478 degrees Fahrenheit it ignites (a low ignition temperature), burning with a blue flame and giving off vile fumes. It constitutes .1 per cent of the first ten miles of the earth crust; 1 per cent of the body; a larger percentage of hair, nails, and animals' horns, 1 per cent of the yolk of egg protein; about 2 per cent of beans, peas, lentils. Its compounds cause the characteristic smell of garlic, mustard, onions. Its potent, burning acid is found in rivers that run down volcanic slopes; in a Persian spring whose sulphurous waters are used for seasoning food; in the snail Aplysia.

Until the 20th century the only industrial supply of free sulphur was that of Sicily, concerning which Atom S entered high finance for the first time, and disastrously. In 1838 the King of Naples sold his sulphur export monopoly to M. M. Taix & Cie. of Marseilles, who boosted the price from £5 to £14 a ton (nearly four times its present price, unadjusted). This monopoly was broken when the British learned to make sulphur dioxide and sulphuric acid from pyrites. They combined with the Italian interests in 1894 to form the Anglo-Sicilian Sulphur Co., capitalized at £735,000. The success was immense; dividends as high as 50 per cent per annum were paid on the common stock. The world was untroubled by the news in 1869 that a great dome of sulphur had been discovered while drilling for oil in Calcasieu Parish, Louisiana, and the first attempts to mine this dome were unsuccessful. But after 1903 the sulphur supremacy, for reasons presently to be considered, began to shift to the U. S. By 1906 Anglo-Sicilian Sulphur had been forced out of business, and to avert another crisis in the Sicilian sulphur mines the Italian Government formed an obligatory trust—Consorzio Obbligatorio per L'Industrie Solfifera Siciliana. All Italian mines must belong to this trust, and the price of Italian sulphur is fixed so that it will never sell below cost.

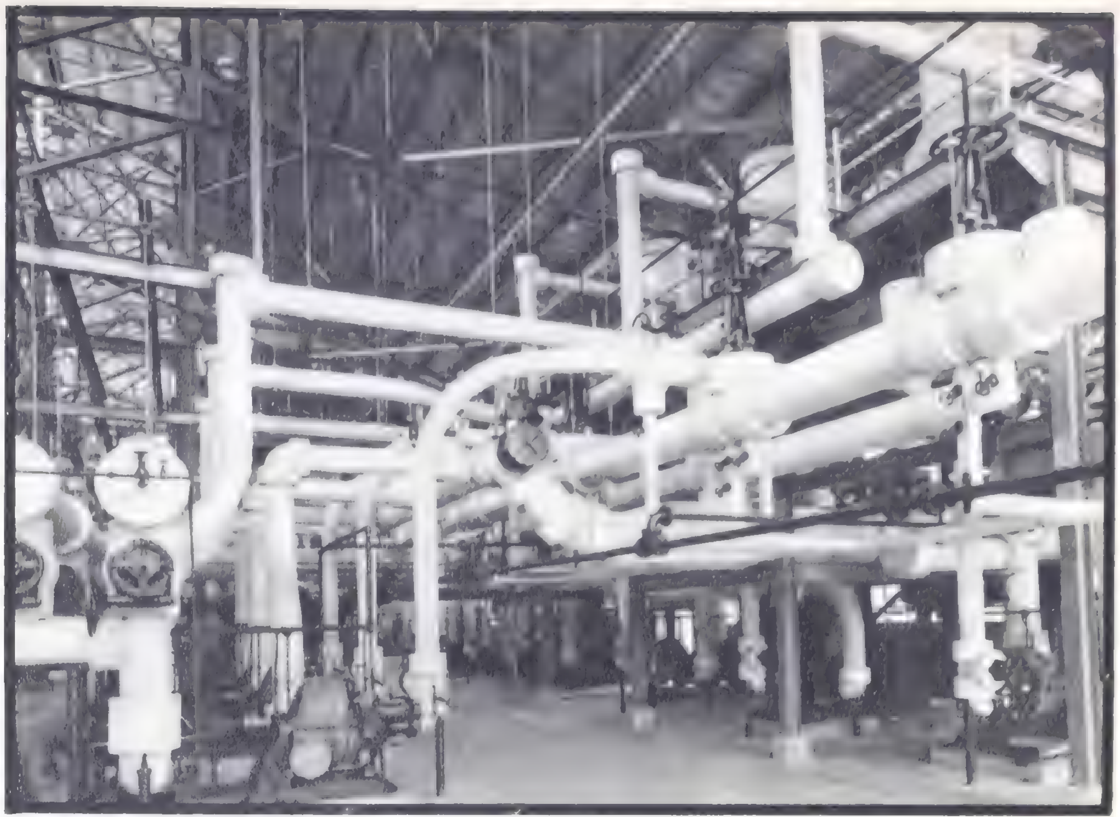
As if the state of Texas did not already have its share of the earth's riches with a $314,000,000 cotton business, a $227,000,000 petroleum business, a $73,000,000 corn crop, together with countless mines, quarries, and herds, it alone of all states in the Union contains large free sulphur deposits to which the world pays an annual tribute of almost $45,000,000. The sulphur sceptre is now in the hands of $30,000,000 a year Texas Gulf Sulphur Co. and $15,000,000 Freeport Texas Co. Of the 2,362,389 long tons produced in the U. S. last year, these companies contributed 95 per cent, which was over 75 per cent of the world's total production. Sicily reached her maximum production in 1905 with about 550,000 long tons, dropped to 340,000 in 1913, produced about 240,000 tons last year. Japan produced about 59,000 tons last year, Chili 16,000 tons; nowhere else in the world was free sulphur mined in industrial quantities. The Texan deposits are almost on the shore of the Gulf of Mexico, from fifty to a hundred miles south of Houston. All of them were discovered accidentally while drilling for oil; until recent years, when the two American companies have had to face the future, such a thing as prospecting directly for sulphur was unknown. Moreover, the deposits are the only ones of their kind so far discovered, being in the form of rhombic crystals 99.5 per cent pure, lying upon salt plugs that have risen from unknown depths, the whole covered by mounds of clay, sand, and gumbo. Against this set-up the Sicilian and Japanese deposits, in the form of ores containing 10 to 40 per cent sulphur, can scarcely compete.

In fact, the only worthy competitor of Texan sulphur is iron pyrite, an ore which, in its yellowest version, is called "fools' gold." Manufacturers of sulphuric acid buy pyrites, from which they extract sulphur dioxide gas (SO_2) by burning. But in some cases this process is expensive; always less convenient than the use of pure sulphur such as is sold by Texas Gulf and Freeport Texas. Therefore pyrites are cheaper than sulphur. The Spanish pyrites dominate, containing about 48 per cent sulphur, but even Spain has suffered by the marvelous growth of Texas Gulf and Freeport Texas, particularly since the War. The U. S. imports of Spanish pyrites have fallen from an average of nearly 1,000,000 tons a year, 1910 to 1916 inclusive, to little more than 500,000 tons in 1929. Copper and zinc sulphides constitute a third source of sulphur, which is thus a by-product of copper and zinc mining, but the quantities so released to industry can hardly be called competitive to the production of the Texas companies.

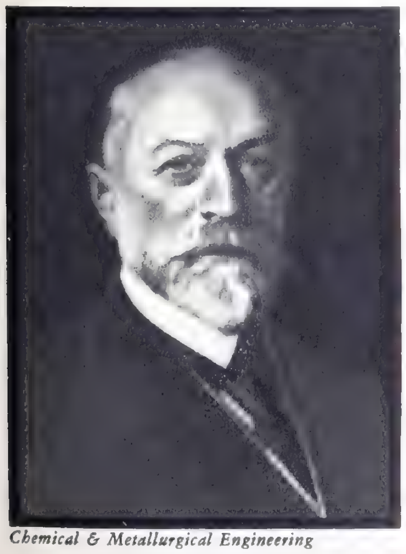
Thus the position of Texas Gulf and Freeport Texas is such as has fallen to the lot of few American corporations. Not only does their product enter every home, office, and conveyance in the land, but 855,500 tons of it—more than 30 per cent—are exported to a world becoming more and more dependent on sulphur for its industrial life. Furthermore, either of the American giants could undersell the European producers ton for ton if it chose to. Neither of them does so because the export price of sulphur is fixed by agreement with the Italian Government under the terms of the Webb-Pomerene Act. A further agreement with Italy allows her a minimum export tonnage of 25 per cent of world demand outside of Italy and North America, but this figure is somewhat greater than she is able to meet. The exporting is carried on by the Sulphur Export Corp., formed in 1922 and owned equally by Texas Gulf and Freeport Texas, and the export tonnage is equally divided between the two owners. But while the foreign price ex-vessel usually runs a few dollars higher than the ex-vessel New York price, there is a clear line to be drawn between the foreign quotations, fixed by agreement (for the protection of the Italian producers), and the domestic quotations which, as a recent government investigation has shown, are determined by no agreement of any kind. The price of cheaper pyrites is the chief domestic determinant, the aim of both Texan companies being to make it worth while for sulphuric acid manufacturers to use sulphur instead of pyrites.

Other factors make the position of Texas Gulf and Freeport Texas even more unique, particularly the stability of the price of sulphur at the mine. Although the price has risen from $14 to about $18 since the over-production years following the War, it has not had a spread of more than fifty cents a ton in any year since 1926, the cause of such stability being that sulphur is sold on long term contracts to established customers who guarantee one producer or the other all the business they have. The price of 99.5 per cent pure sulphur (as it is guaranteed by both producers) is still further stabilized by the almost infinite ramifications of sulphur in modern life, which means that if a certain market for it is weak, some other is almost certain to be strong. For instance, the present low price of zinc has forced many zinc mines to close; sulphur dioxide, a by-product of zinc mining, is no longer available; sulphuric acid manufacturers must buy sulphur from Texas. Especially in the Middle States this outlet has compensated for a slight falling off of sulphur sales in the present depression. On the other hand, when it occurs, overproduction of sulphur is not costly and storage in the great weather-exposed yellow bins is almost negligible (taxes aside). And by way of final blessing, there is no such thing as a sulphur junk pile, as there is for copper and iron; once consumed, every atom escapes forever the mercenary clutches of men.

Largest sulphur producer in the world, Texas Gulf is also younger than its nearest competitor, for although the company was incorporated in 1909, its active production did not begin until 1919, when it opened the huge Matagorda deposit and erected the town of Gulf, Texas (1,500 inhabitants). Greatest and most economical sulphur deposit in the world, Matagorda has now produced consistently for ten years and may be considered to have entered its old age.


Courtesy of Texas Gulf Sulphur Co.

BUT IN TEXAS THE PUMPS AND PIPES OF INDUSTRY CONVERT SULPHUR MINES INTO WELLS


Chemical & Metallurgical Engineering

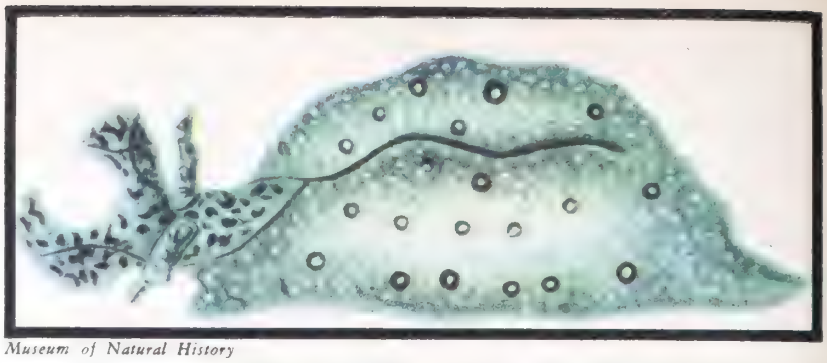
HERMAN FRASCH

INTERESTED IN SULPHUR AS A SIDE LINE TO HIS DUTIES AS CHIEF CHEMIST OF THE STANDARD OIL CO., HERMAN FRASCH (LEFT), WHO EMIGRATED TO AMERICA IN 1868 AND STARTED LIFE AS A PHARMACIST, REVOLUTIONIZED THE SULPHUR INDUSTRY, SET AMERICA UPON A YELLOW THRONE

Foster

LANGBOURNE M. WILLIAMS JR.

A NEW POWER IN THE SULPHUR INDUSTRY: LANGBOURNE M. WILLIAMS JR. OF RICHMOND, VIRGINIA, VICE PRESIDENT AND TREASURER OF FREEPORT TEXAS CO. HIS CHIEF, EUGENE L. NORTON, IS AN EMINENT BALTIMORE FINANCIER. O. R. SEAGRAVES OF UNITED GAS CO., AVIATOR, IS CHAIRMAN OF THE BOARD



Museum of Natural History

SNAIL APLYSIA FIMPRIATA AND HIS COUSIN . . .

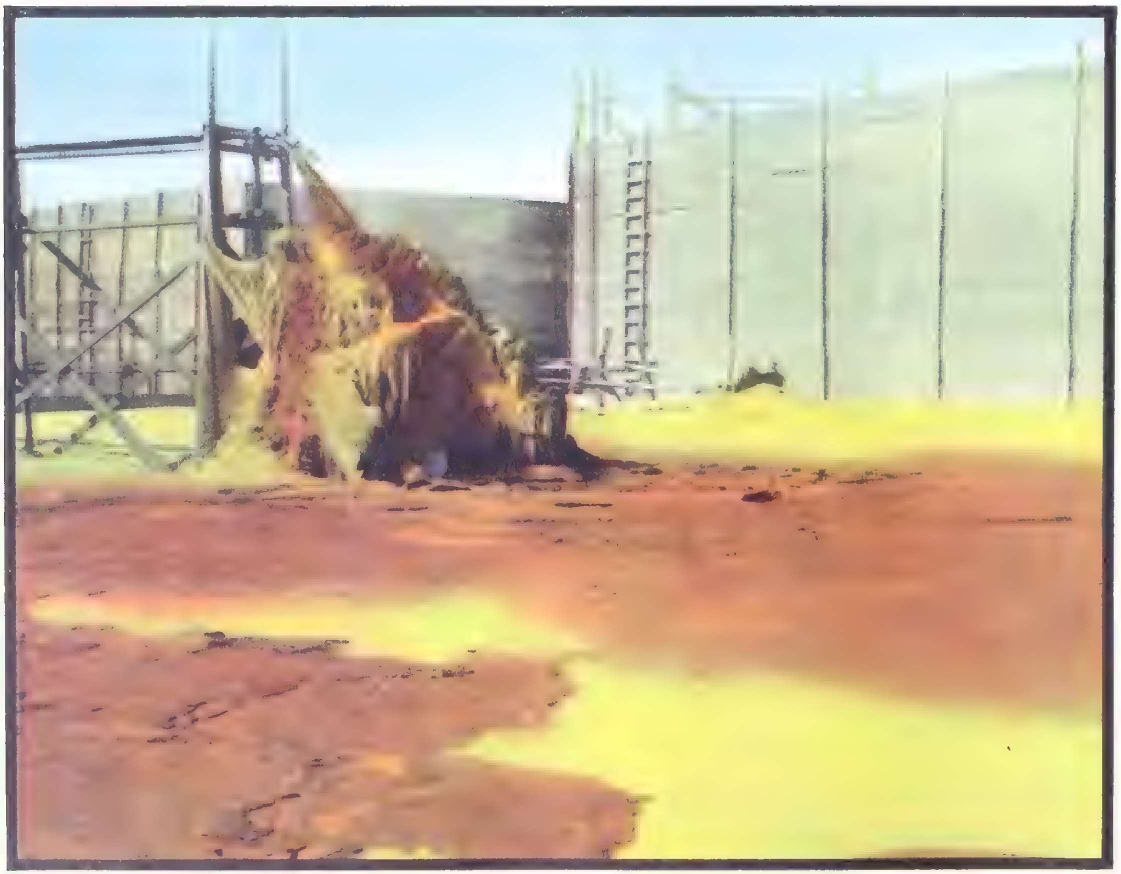
They are called sea hares, resembling the swifter land hare a-crouch. Cirrhifer is found off the Island of Mauritius, Indian Ocean; Fimpriata in the shallow

Nevertheless, for any possible decline in yield, far-sighted conservative Texas Gulf, whose board of directors includes some of the most distinguished financiers of the nation, is amply prepared. Between Gulf and Houston, Newgulf has been constructed, where the company has recently begun to mine Boling Dome and Long Point Dome (both leased from Gulf Oil Corp.), with an estimated life of forty years. This stride into the future was taken very gracefully, beginning in 1927, its cost of some $15,000,000 to date being paid out of earnings without any new financing or any quiver in the $4.00 dividend rate. Although production has increased only 100,000 tons from 1926 to 1929, a rise in the average price of sulphur at the mine from $14 to $18, together with a quickening of sales relative to production, has increased the gross from $18,152,000 to $29,883,000, and the net income before depletion from $9,383,000 to $16,247,000. Depletion reserve is blanketed under a $21,000,000 surplus. By way of illustrating the stability of the sulphur market, during the stock crash of November, 1929, the company did the largest business of any month in its career; for 1930, while foreign orders have slumped badly, the company anticipates only a slight decrease in total sales.

Less smooth has been the course of Freeport Texas, a holding company with a broad charter, whose chief subsidiary is Freeport Sulphur Co., owner of Bryanmound and leasor of enormous Hoskins Mound from the Texas Co. (the oil corporation). Texas Co. extracted 300,000 barrels of oil from the dome before leasing it. The estimated life of Hoskins Mound is twelve years, that of Bryanmound three; but these figures are conservative and are typical of a number of things that have happened to Freeport Texas in recent months. When the Freeport Texas syndicate was organized in 1911, John L. Williams & Sons, bankers of Richmond, Virginia, were members of it, but were not in agreement with the management formed in 1913, or with President E. P. Swensen, former chairman of the board of the National City Bank. The Williams' interests, never exactly quiescent, undertook an active investigation when the stock, having risen from 36 to 109, dropped forty points in forty days during the bull market of January, 1928. In April, 1930, they achieved a working control of the corporation. New President Eugene L. Norton is a Baltimore financier, while young, aggressive Vice President and Treasurer Langbourne M. Williams Jr. has been prime mover of the reorganization since entering his father's firm in 1928. Having installed themselves in office last July, this management has written off $1,867,000 from surplus, has announced a reduction in officers' salaries of 30 per cent, begun prospecting, created new depreciation reserves, issued serious statements to stockholders. While intending to maintain the present $4.00 dividend rate, they believe that the dividend policy of Freeport Texas has been extravagant hitherto. Since 1926 the company has paid out $10,765,000 in dividends from earnings of $11,095,000.

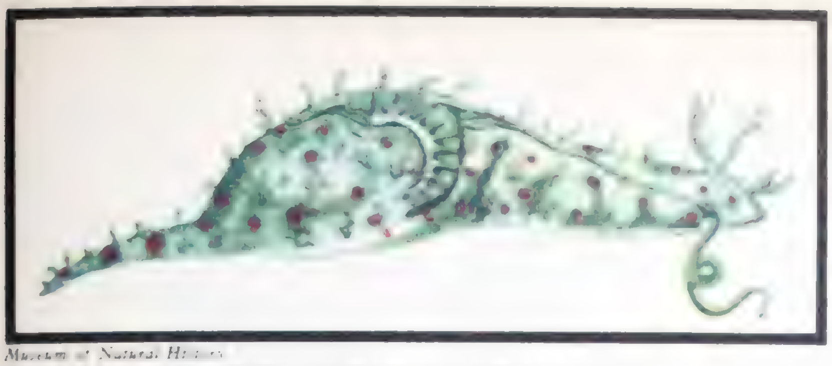
In his fabulous distribution through industry Atom S is no myth, as perhaps he was in some of his other incarnations. His great affinity for oxygen is used to build up the powerful molecule of sulphuric acid (oil of vitriol) (H_2SO_4), without which modern industry would literally be helpless. Over 50 per cent of total sulphur production goes to industry as sulphuric acid, used most familiarly in the storage batteries of the nation's automobiles. The principle of the battery is the converting of electrical energy into chemical energy (charging) and the reversing of this process (discharging). To accomplish this, a positive electrode of lead peroxide and a negative electrode of sponge lead are immersed in a bath of dilute sulphuric acid. If the two electrodes are connected by a wire, the sulphuric acid molecule will break up and form lead sulphate on both electrodes and water. This will produce a current flowing out by way of the lead peroxide electrode. If an electrical current is forced through the battery in the opposite direction (from the lead peroxide to the lead), sulphuric acid molecules are built up again, the battery is made ready to send back current the other way. The sulphuric acid in this case is called an electrolyte, and there is no other electrolyte so efficient.

But Atom S not only starts cars in the morning and lights them at night: without it there could be no rubber tires. Vulcanizing—the word recalls our hero's marriage to Venus—converts rubber from a gummy, soluble raw material into sleek, insoluble auto paws. Atom S plays other automotive rôles in the manufacture of automobile paint, automobile fuel, automobile lubrication, automobile fabrics, and a hundred plated parts that automobile drivers know little about. Enormous too, and ever-growing, is the use of sulphur in the treatment of wood pulp. Out of this industry come three very different products—newspaper, stockings, and explosives. In a sulphite form—usually calcium bisulphite—Atom S is used to reduce wood



Freeport Texas Co.

HOT LIQUID SULPHUR POURING INTO A BIN. COOLING, IT TURNS A BRIGHT YELLOW



Museum of Natural History

. . . APLYSIA CIRRHIFER, SECRETE SULPHURIC ACID
waters of Japan. They discharge purple cloudy fluid in which they hide from enemies; contain sulphuric acid, the "life blood of modern industry."

chips to pulp, dissolving the woody tissues (lignin) and leaving the cells of cellulose practically intact. It is also part of the "spinning bath" of the rayon manufacturers, and so dependent are they upon him that for every ton of rayon produced, one and one-half tons of sulphuric acid (66 degrees Baumé) are consumed. Besides its use for stockings, the rayon thread is, of course, used to make cotton goods, knitted underwear, rubberized surgical silk, woolen outer goods, automobile tires. Irony of modern industry, this former god of fire is now used in the manufacture of fire extinguisher fluids. Although essential to the manufacture of modern high explosives, it is no longer a part of the final product. Contrary to popular conceptions, it scarcely enters into the match industry at all, phosphorus (Atom P) having been substituted almost entirely; nor into the metal working arts, the sulphurous smell of giant steel plants arising from sulphur dioxide (SO_2) released in vast quantities by the burning of coal. The importance of Atom S to the steel industry lies in its use for pickling steel, 770,000 tons of sulphuric acid 50 degrees Baumé (about 154,000 tons of sulphur) having been bought for this purpose in 1929. This pickling is a process of cleaning off, before plating or galvanizing, a thin coat of oxide that forms on all rolled steel plate or drawn wire.

But add these 154,000 tons used by the steel industry every year to other tons used in dyeing, in purifying water, in making glass, soap, moving picture films, celluloid, high explosives; add still more tons used to make paint and pigments, electrolyte, glue, glycerine, alcohol, shoe polish; add, if you will, the cubic miles of sulphur dioxide gas used by mechanical refrigerators, fumigators, bleachers, and food preservatives—you have still not equaled, in tons of sulphur, the amount consumed every year by the agricultural industry alone. For sulphur must be ranked among the great fertilizers of the soil, acting not as a plant food but as an agent, shifting the composition of other elements, liberating the essentials of plant life. For this purpose, and as insecticide, the U. S. bought 415,000 tons of sulphur in 1929. While this is only 5 per cent of the Union's staggering 7,914,688 fertilizer tonnage, fertilizers containing sulphur make up more than half of those annual tons.

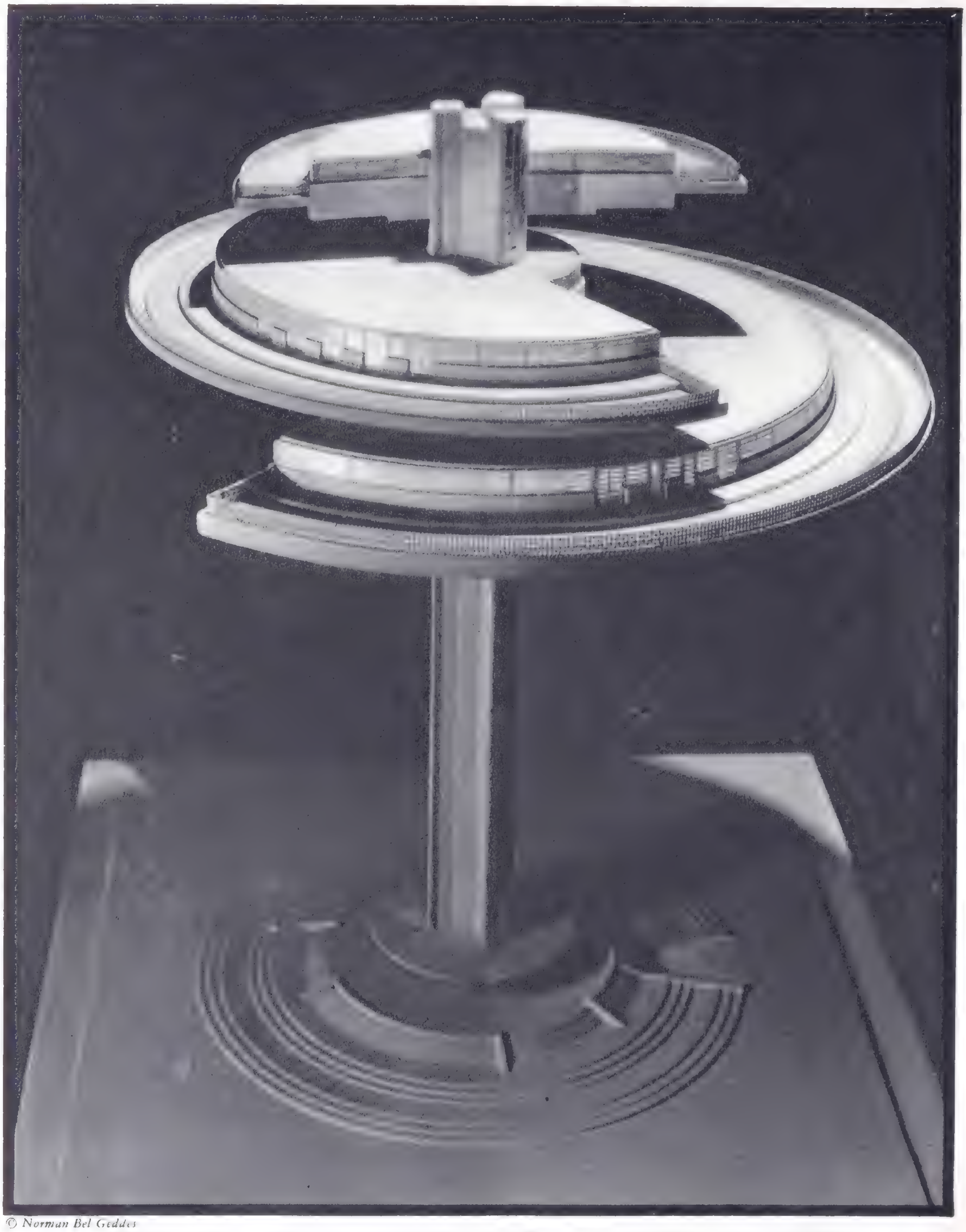
Chief of the sulphur fertilizers is super-phosphate, or acid phosphate, the introduction of which into British agriculture eighty years ago produced a revolution, especially in the important turnip and swede crops. Many soils throughout the world are starved of phosphorus, the application of which benefits the land in the middle western states of the U. S. most notably. Since crops are constantly being removed from the soil, the supply of phosphorus is constantly being diminished. It can be renewed by the application of manure, but there is never enough manure. Chiefly in Florida and Tennessee there are deposits of rock phosphates. These are pulverized and combined with sulphuric acid. The result of this combination is that the sulphur and oxygen atoms of the sulphuric acid unite with a calcium atom of the phosphate rock, forming calcium sulphate or gypsum ($CaSO_4$), while the hydrogen atom of the sulphuric acid unites with a phosphorus atom, more oxygen, and more calcium to form a calcium phosphate salt that is soluble in water. This solubility makes the phosphorus available to plants. Again, in the form of ammonium sulphate, Atom S stimulates the sugar beets of France, the oranges of Spain, the rice of Japan, the sugar of Java. In the U. S. it benefits especially alfalfa, cotton, tomatoes, and sweet potatoes. It is sometimes used to neutralize acid soils. Death to bugs, it has saved many a potato crop, many an orchard, when used as a sulphur dust or spray.

Behind these varied industries, behind the U. S. domination of the sulphur market, stands the brain of a single man. Herman Frasch, the "king of sulphur," was the son of a burgomaster of Gaildorf, Württemberg. He emigrated to America as a pharmacist in 1868, and finally became chief chemist for the Standard Oil Co. When the first U. S. sulphur mine was discovered in Louisiana—according to history by the Louisiana Petroleum & Oil Co; according to legend by a country physician drilling for oil, name unknown—attempts to mine it proved fatal because of the deadly fumes and quicksand. Frasch set about developing a process that would make the valuable deposit available to industry. In 1891 he patented a disquieting idea, an idea at which the Anglo-Sicilian captains snorted and of which Frasch's friends in the Chemists' Club, New York, made comedy. For years Frasch argued that sulphur melts at 239 degrees Fahrenheit, only fourteen degrees above the boiling point of water; that water under pressure can be heated above its boiling point (this is called superheating); that if, by an ingenious arrangement of pumps and pipes, superheated water could be injected into the Louisiana deposits, the sulphur at the bottom of them would melt, could then be forced to

[*Continued on page 118*]

Freeport Texas Co.

A RESERVOIR TO BE HEATED ABOVE BOILING POINT TO MELT THE BOWELS OF THE EARTH



© Norman Bel Geddes

MODEL FOR AERIAL RESTAURANT DESIGNED BY NORMAN BEL GEDDES
FOR THE CHICAGO WORLD FAIR

Built of steel, glass, and aluminum, this restaurant is perched on a steel shaft, 278 feet in height, and slowly revolves so that diners, between the *hors d'œuvre* and the coffee, may enjoy a complete panoramic view of Chicago, the fair grounds, and Lake Michigan. There are actually three restaurants on three levels. The lowest seats 600 people and has a dance floor. The middle level is devoted to refreshments. The highest prices will be asked on the highest level. The shaft contains three guest elevators and nine service elevators.

Skyscrapers: Builders and Their Tools

From headquarters issue a hundred coördinated commands. Caissons bury their noses in quicksand, an engineer blindly obeys a tinkling bell, silently Eagle's Gang plays ball with rivets, the Tower rises, and Ed Radigan fingers a gold button.

THERE will be a neat and entirely legible sign on the board fence around the excavation reading George A. Fuller Co., Builders, or Thompson-Starrett Co., Inc., Builders, or Marc Eidlitz & Son, Inc., Builders, or Starrett Brothers & Eken, Inc., Builders. Below in equally neat but much less legible lettering will appear the architect's name. And the difference in lettering expresses the relative importance of architect and builder at this stage of the proceedings pretty accurately. Between the completion of the plans and the opening of the doors, it is the builder's show. He runs it. He runs the materials and he runs the men and when the lot looks most like a cross between the Times Square subway station and the Hanging Gardens at the County Fair, he is running it the hardest.

Anyone who got past the gatemen at Forty Wall Street in August or early September of last year might have discovered that for himself. Forty Wall (The Manhattan Company Building) presented every difficulty known to the building trades. It was going to be the tallest or the second tallest tower on Manhattan Island. It was being built in the most congested district of New York with another skyscraper going up across the street and two more in the neighborhood. And it was to be built in eleven months instead of twenty or twenty-four. The lot looked it. In August the steel was well up in the air, the masonry was only a few floors below it, and the terra cotta workers and carpenters and ornamental iron people were all over the lower floors. There were about 2,000 workmen in the building. The air was filled with the descending dust of a dozen trades sifting down through the hatches and the shafts. Bell signals like the repeating strokes of a house full of insane clocks chased each other through the columns. The riveting away up aloft sounded like machine guns across a valley. The ground floor and the basement were filled with men pushing wheelbarrows, men carrying sacks, men with tools in their hands. Hoists were vanishing up dusty chutes. Donkey engines clattered. There was no order or sense to anything, and the young men with the notebooks who dodged in and out through the crowds only emphasized the confusion. And actually the whole process was under the most complete and observant control. The hoists and the sacks were moving in accordance with a carefully constructed plan. The men were where they were expected to be. And the building was going up faster than any building of comparable size had ever gone up before.

The central point of the control was a heavy-set, dark-haired, large-handed ex-carpenters' foreman named Adams. Mr. Adams was superintendent of the job. He sat at a desk at one end of the shed Starrett Brothers & Eken had put up for their field offices on the bridge.

This was the executive office of a great industry. From this wooden shack the expenditure of $12,000,000 in steel and brick and cement and wood and men would be directed and recorded.

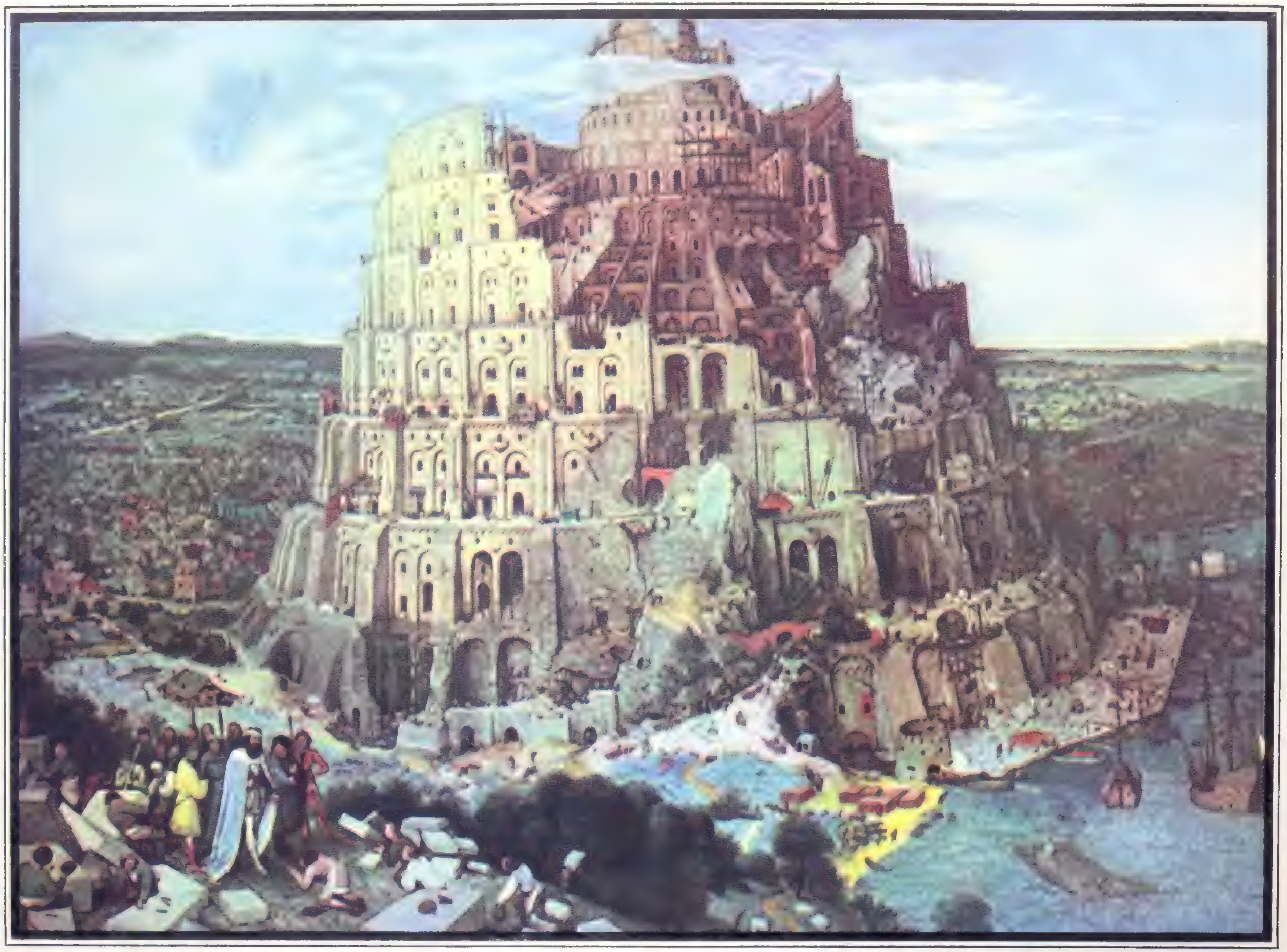
Auditors and Timekeepers.—The recording was the basis of the direction. It was necessary for the builder to know at every moment what he had spent, and for what, in order that he might know where he was going and how. The records of the timekeepers have three main uses: to determine the pay owed the builder's own workmen, to determine the liability insurance rates (and since the rates differ with the trades, record must be kept of every change in the employment of every workman: if a painter goes from inside to outside painting at 10.27 A.M it must be known in the timekeeping department at once), and to determine labor cost to builders or sub-contractors when builders or sub-contractors are employed on a cost-plus-fee basis. Starrett Brothers & Eken do their own liability insurance work for their own men through their own insurance company, but the premiums are part of the cost and must be precisely computed.

The usual method of timekeeping was used at Forty Wall. A workman arriving at the job checks in by receiving a small brass coin from a checker at the gate. On leaving the job he checks out by returning it. And during the day his presence is twice assured by personal inspections. Of the twenty-four timekeepers at Forty Wall, thirteen were engaged in this latter work.

The Job Runner.—Field operations are in the hands of the job runner—a sort of combination liaison man and brigade commander. He is responsible for contacts with the sub-contractors and the architect and for the disposition of the drawings which control the work. These drawings are continuously in transit, the architect correcting the sub-contractor's blue prints and the sub-contractor laboring to make stone and iron shapes out of the architect's designs, and the job runner must know at any given moment where any given drawing is to be found. Also he is responsible for the prompt and regular delivery of materials. Which means that in all fabricated materials expediters from the job runner's office must follow shipments from the manufacturer to the site and must, in some cases, pursue the raw materials from their source, the quarry for instance, to the factory. In the case of Forty Wall Street, for example, seven expediters were used.

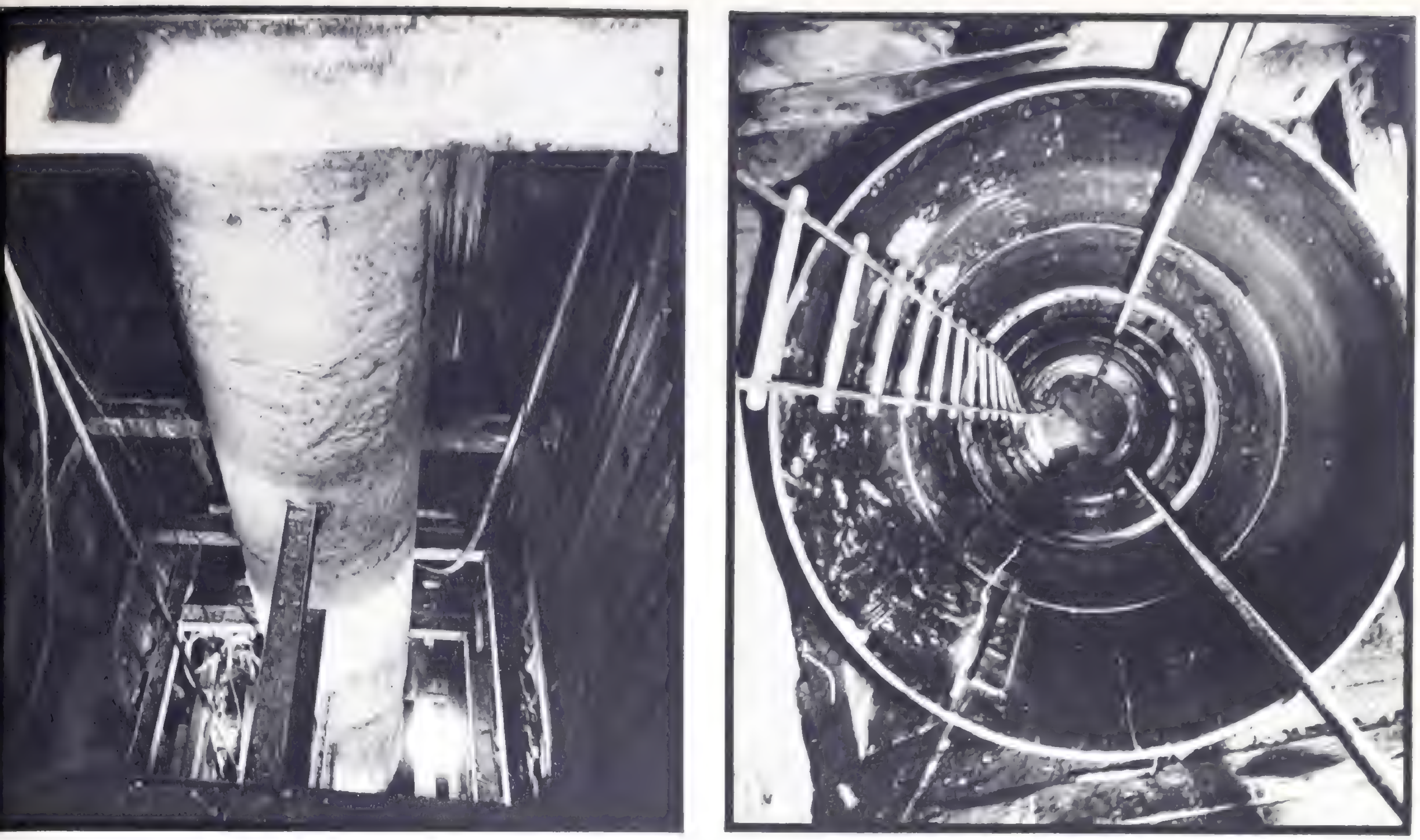
The steel deliveries were the most important and hence were most carefully watched. Levering & Garrigues, the steel erectors at Forty Wall, worked on a weekly schedule. Every Monday morning a meeting was held in their offices attended by representatives of their drawing room, their purchasing agent, their own fabricating shop and the shop of the Bethlehem Steel Corp., and their own erection department. A decision was reached as to the quantities of steel to be delivered during the week and the days of delivery. Two days before the steel was due the expediters went to the foreman on the job and were instructed as to the *hour* when the steel would be needed. They then communicated with the railroad yard office on the Jersey side of the river to be sure that the expected cars (700 or 800 were needed) had arrived, and notified the lighterage department of the railroad of the weights to be carried across the river. Having arranged for their lighters, the expediters then telephoned the New York City dock master to reserve a berth and the trucking company to secure the necessary trucks. Most of the slips in steel delivery occur somewhere between the berth and the lighter. The trucks, which are rented by the builder, rarely fail, and the railroad can usually be counted on. The Lehigh Valley Railroad is particularly popular with steel erectors as it keeps a continually changing and constantly accurate record of the whereabouts of all cars.

Once arrived on Manhattan Island the steel was loaded on the trucks according to the markings given it. On the Forty Wall Street job each derrick was given a color and each truck driver was told the color of the derrick for which his steel was destined. The trucks were then driven to a point south of William Street and out of the traffic from which the building could be seen. As a derrick needed steel, a flag of its color was



TOWER OF BABEL—*BY BREUGHEL*

PETER BREUGHEL, GREAT PAINTER AS HE WAS, WAS ALSO A GREAT ENGINEER. HE UNDERSTOOD THAT IT WAS NOT THE LANGUAGE PROBLEM, BUT THE WEIGHT AND THICKNESS OF THE MASONRY WALLS WHICH LIMITED THE HEIGHT OF BABEL'S TOWER



THE CAISSONS ARE ROLLING ALONG

Only this kind will not roll. Or even move. The cylinder on the left is a sixty-foot open caisson working down by hand through the quicksand under The Manhattan Company Building. When filled with concrete, as in the picture on the right, it supported its share of twenty stories of steel while a square caisson for the permanent foundations went down around it.

broken out, and the proper truck drove in.

The Chief Labor Foreman.—Under the assistant superintendent for the mechanical trades stand the various foremen for the various trades. Most important of these so far as deliveries are involved is the chief labor foreman. He is responsible for the allocation to the proper floor and place of materials which, unlike steel, cannot be swung up at once by outside derricks. On the Forty Wall Street job the chief labor foreman had at his disposition eight hoists, four of them running to the top of the building. These hoists were the property of Starrett but were available for the use of sub-contractors at $5.00 an hour—the actual cost of operation and maintenance being about $15 an hour.

The delivery of labor to the various floors was also a problem in the Forty Wall Street tower. The elevators available did not go to the top of the structure as it rose and, since the men checked in at the gate, the climb from the top of the shaft to the fortieth or fiftieth floor was made on the boss's time. Starrett estimated that the loss at the height of employment amounted to as much as $1,500 a day and that the working time of some of the men was cut to six hours. It was for this reason that elevators for the workmen were installed at a considerable initial expense on the Empire State job in 1930.

The coördination of all these various items of material deliveries and labor allocation and timekeeping in the little portable house on the bridge did not, however, complete the Starrett organization. Starrett had other jobs going on at the same time, sixteen of them, involving a total of $75,000,000. And all these jobs were controlled, as was the job at Forty Wall Street, from the central office of the company. It was possible for Mr. Eken in his office to say just how much money he had in the building as of August 18, just how far each item of construction had been carried, and whether or not (barring acts of God and the public enemy) the building would be finished on the following May 1.

FOUNDATIONS

Accomplishment of the obviously impossible at 40 Wall.

THERE is rock under the city of New York as there is rock under Mexico City (if you can find it). But the rock level in the lower island alone is anything from 183 feet below curb level and 150 feet below high water at Duane Street to forty-two feet above high water at Thirty-third Street. And over the rock is sand (quicksand and running sand), which will flow like slow water into new excavations and out from under neighboring walls. Where the rock is too deep, skyscrapers will not flourish. They cost too much to build.

Consequently the first task of foundation engineers is to advise promoters as to the feasibility of sinking adequate foundations on a given site. Most of them use, for this purpose, not geological survey sections, but a map called the Vielé Map, which shows the street markings of the city superimposed upon the old streams, ponds, and original shore lines of the city. If the site is over an old stream or a pond (as in the district around Chambers Street), the engineers are apt to advise against skyscraper construction on the ground that the rock will be low and the sand silty. But in almost any downtown location difficult footings between curb level and rock must be expected.

The situation in Chicago, substituting clay for sand and increasing the depth of the rock level, is approximately the same. So is it in London and in the cities of the Mississippi Valley. Alluvial deposits of sand or clay over ledges of subterranean rock.

The problem of supporting 25,000 to 50,000 tons of masonry, hung on such bottoms, is not a simple one. In Chicago, where the first true skyscrapers were built, an attempt was made to float the steel on rafts of stiffened

Photos by Arthur Gerlach

OLDER THAN EGYPT

And still working. The modern derrick hitches the physics of the Pharaohs to the engines of America and builds skyscrapers four floors a week.

concrete. But even under such relatively light loads as two tons to the square foot the buildings settled. And went on settling for years. Then, in New York, an attempt was made to drive wooden piles to hard pan, cutting them off at water level. But the water level would go down as the result of subsequent pumping in the neighborhood, and the piles would rot. Finally Charles Sooysmith, an engineer contractor who had had experience with the construction of pneumatic caissons in bridge construction, succeeded in sinking masonry piers to bed rock. Open-bottomed steel air chambers, large enough for the operations of excavators working inside them, ate their way down through the muck, and on their backs, as they descended, bricklayers erected piers. So that eventually the building, like the elephant on the back of the tortoise, stood on the bells of steel. And the bells of steel stood on the rock.

But it is not enough to find the means of sinking your own foundations. Foundations of existing buildings must, at the same time, be safeguarded. To protect them the practice grew up of jacking steel pipes down to hard pan under the walls surrounding the lot and of damming back the quicksand by driving a wall of metal around the entire periphery.

Subsequent developments have substituted (for the pneumatic chamber) caissons, like lengths of steel sewer pipe stood on end, which are let down as the excavators work the ground out from under, and are at last filled with concrete; and concrete-filled steel tubes which are driven down to bed rock by pneumatic or steam hammers. The latter, the latest development in the field, are preferred because they expedite the work.

The foundation work and the excavating for Forty Wall Street illustrate the difficulties encountered and also constitute one of the great engineering triumphs of this branch of building. The complicating elements of the problem in that case were as follows:

> The soil was quicksand to forty-nine feet below street level and thereafter hard pan (with a mixture of boulders) to rock bottom at an average of sixty-four feet.
>
> The lot was already built over with old-fashioned structures having heavy masonry foundations.
>
> The lot was located in one of the most congested districts of the city.
>
> Due to the value of the land and the heavy carrying charges, speed was of the essence of the contract. The last tenants vacated the old building on May 16, 1929, and the steel work was scheduled to begin June 17, 1929.
>
> It was impossible, in view of the speed requirements, to delay foundation work until the wreckers had cleared the site: both wrecking and foundation work had to be done in thirty-two days. Which meant that they had to be done at the same time. But if they were done at the same time, it would still be impossible to complete the foundations within the time allowed.

Faced with this situation, Spencer, White & Prentis, Inc., the foundation engineers, adopted a program never previously attempted in skyscraper construction. They decided to build their foundations in two steps: a preliminary light footing capable of carrying twenty stories of steel and so constructed that it could be added to while those twenty stories were going up upon its shoulders, and a final heavy footing capable of carrying the whole weight of the building.

This program was carried out. The old foundations fouled the new work at every point, and the girders of the old buildings cut down the head room to such an extent that it was impossible to use driven caissons. The adjoining building on Pine Street, which had been built upon a concrete mat, had to be underpinned with sectional steel cylinders. The open caissons, which were worked down by hand, struck boulders of great size. Care was required to keep quicksand from boiling up in the working chambers. And traffic conditions inside and outside the lot added to the natural difficulties of the work. But by the time the old buildings were completely demolished the light footings were ready to take the steel, and by the time the steel had risen twenty stories the permanent footings were in place. These methods saved four months' construction time. The interest charges alone during such a period would exceed $300,000.

DERRICK GANGS

A miraculous enterprise of the 10th, 25th, and 26th floors.

IT IS one thing for the architect and the structural engineer and the fabricator's draftsmen to design the steel members of a great building so that they will fit precisely into their slots in the actual frame. And it is another thing to put them there. Excellent administration and skillful planning and constant supervision will roll truck No. 7D down Wall Street with thirty tons of columns at the precise moment that the fall line of derrick No. 5 on the twenty-fifth floor gropes down to street level for another load. But from that time on the labor is actual. And dangerous. And hard.

It is done on precarious footing—on loose planks thrown across a framework of unfinished steel. It is done at great heights. It involves the manipulation of enormous and clumsy burdens capable of destroying everything below them should they fall. And it is controlled by the hand of a man who can see nothing whatever of the work he does. The derrick stands upon the framework of the twenty-fifth floor. Its crew works above it on the lightly bolted skeleton of the twenty-sixth. And the engineer who controls the gigantic boom and the slowly winding fall stands with his engine on the tenth. He moves his levers to the tinkle of a bell blurred by the rattling rivets. As the bell strikes he shuts the power off. As it strikes again he lifts. He cannot see the heads an inch or two beneath the sagging beam.

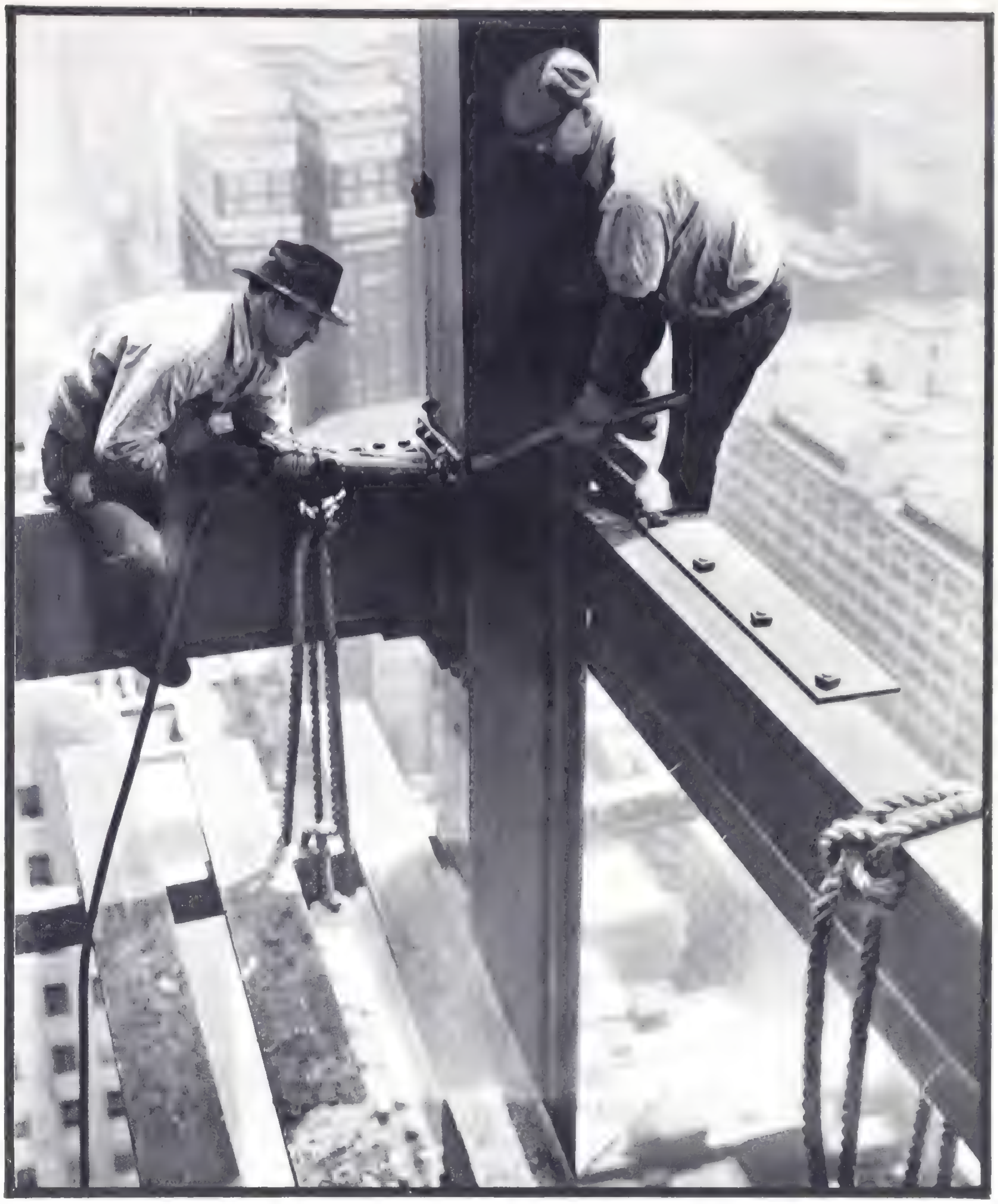
Actual erection is done altogether by the derrick gangs. It is they who raise the steel from the trucks to the working level, who assort it by number with reference to the erector's plan, who swing it into place and bolt it there. They are clever and hardened men. An assistant foreman, like a profane orchestra conductor, directs the derrick, yelling at the bull-stick man who turns the boom, signaling with his arms and his hands to the man who yanks the engineer's bell, jerking his head at the tag line pair whose line guides the dangling column. The sluggish load swings over. The fall line eases an inch, a half inch, till the rivet holes coincide. And the two connecters, straddling the unsteady bar with the street 300 feet below them on one side and the narrow ribs of steel upon the other, slide their bolts in place. It is they who take the greatest risks. They are often killed.

It remains to plumb the column and rivet it. A plumber-up's apprentice climbs to the column's top and lets fall a plumb line. The leanings are marked down. Wire guys and turnbuckles are rigged and the errors corrected. And the column is left for the riveters who follow two floors or three below.

RIVETERS

Why the bloodless building is still a marvel.

THE trouble with all the talk about the decay of artisanship is that it is true. It has always been true. It was true when the last wattle-weaver died and they took to building houses of brick. And it will be true when the tools and machinery of the contemporary arts are replaced by atomic explosions. It is so true that no one takes time to remark that the decay of one kind of artisanship is almost always caused by the growth of another. Modern carpenters would have been laughed off one of the Adam Brothers' jobs. But a riveter can't be expected to break his heart over that.

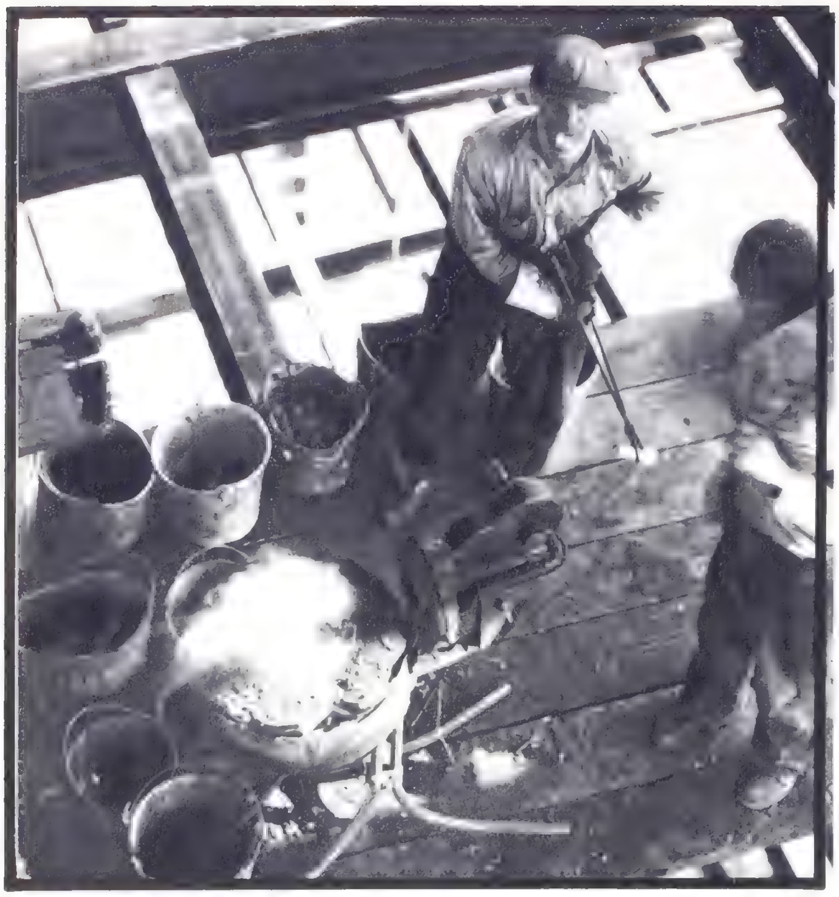


THE ARTISANS ARE DEAD

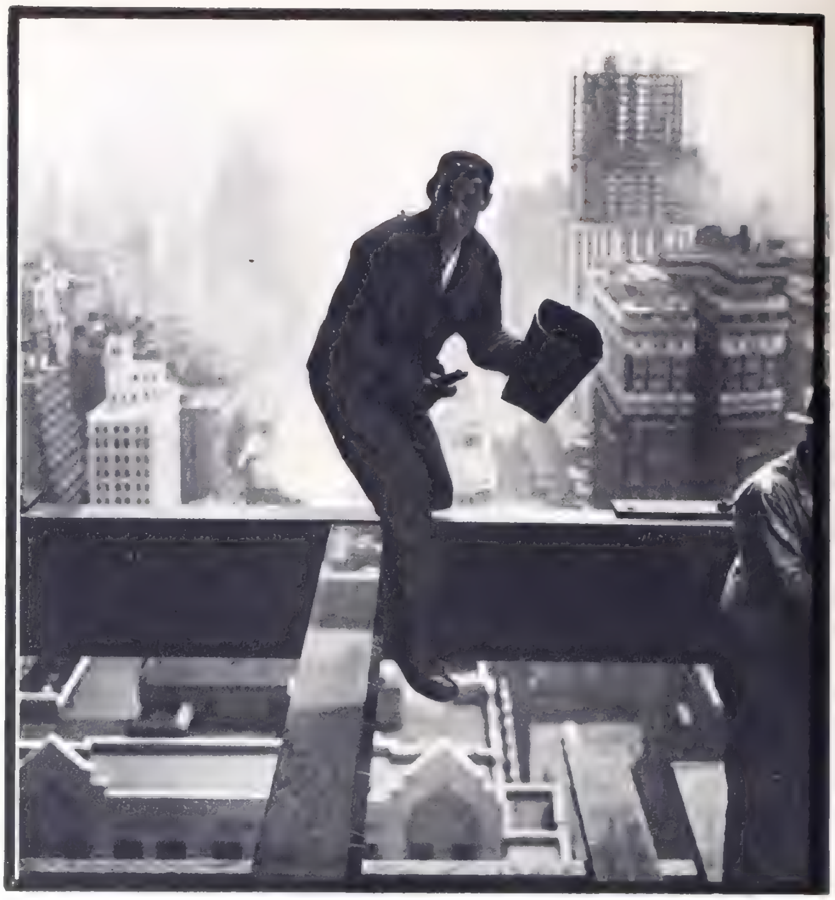
And these are the new artisans. The master-workmen of our time drive steel to steel with hammer strokes of air. But they still depend upon the judgment of hand and eye. And their necks are still breakable.

The most curious fact about a riveter's skill is that he is not one man but four: "heater," "catcher," "bucker-up," and "gun-man." The gang is the unit. Riveters are hired and fired as gangs, work in gangs, and learn in gangs. If one member of a gang is absent on a given morning, the entire gang is replaced. A gang may continue to exist after its original members have all succumbed to slippery girders or the business end of a pneumatic hammer or to a foreman's zeal or merely to the temptations of life on earth. And the skill of the gang will continue with it. Men overlap each other in service and teach each other what they know. The difference between a gang which can drive 525 inch-and-an-eighth rivets in a working day and a gang which can drive 250 is a difference of coördination and smoothness. You learn how not to make mistakes and how not to waste time. You learn how to heat a rivet and how not to overheat it, how to throw it accurately but not too hard, how to drive it and when to stop driving it, and precisely how much you can drink in a cold wind or a July sun without losing your sense of the width and balance of a wooden plank. And all these things, or most of them, an older hand can tell you.

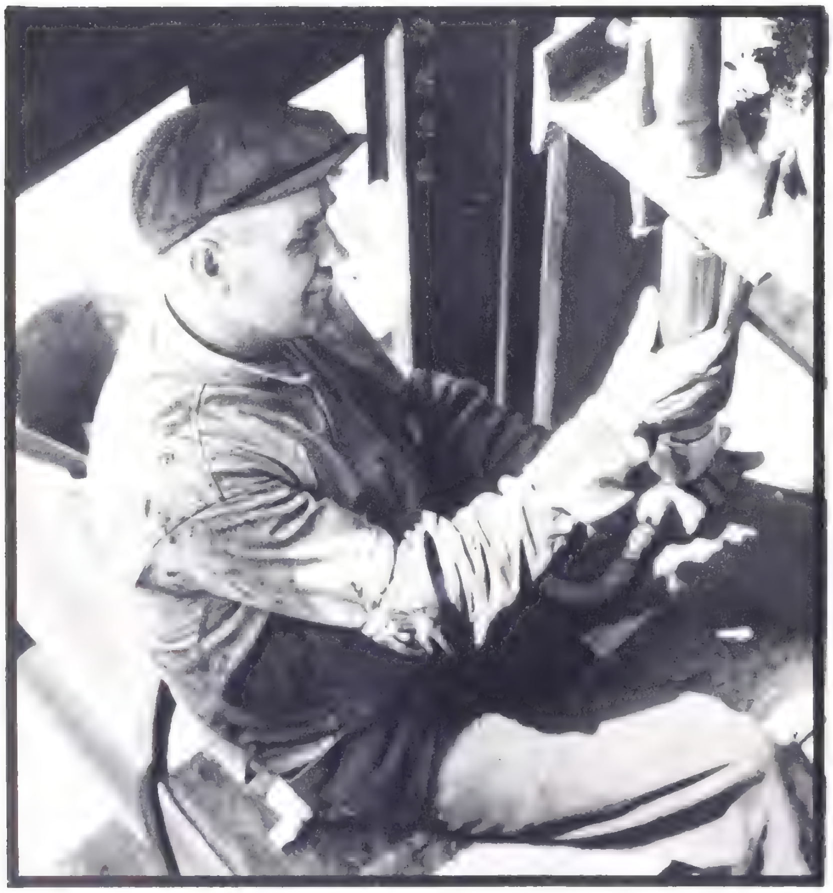
The gang photographed on page 90 is Eagle's Gang, a veteran of the Forty Wall Street job, reputed in the trade to be one of the best gangs in the city. The gang takes its name from its heater and organizer, E. Eagle, a native of Baltimore. It is the belief of timekeepers, foremen, and the leaders of other gangs that Mr. Eagle is a man of property in his home town and indulges in the sport of riveting for mysterious reasons. There are



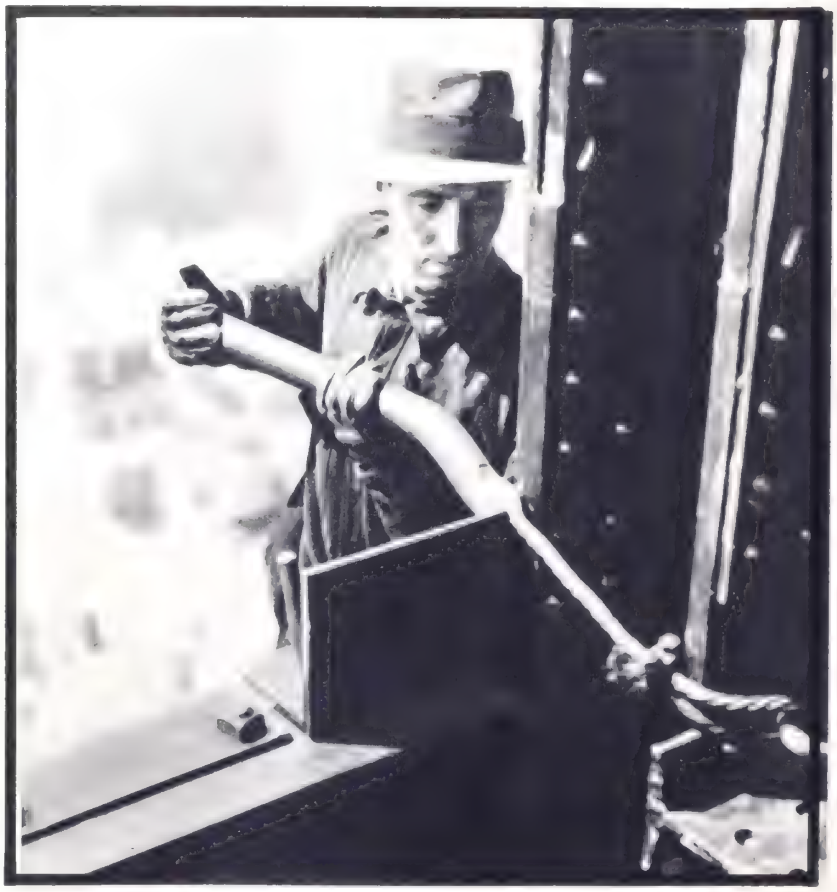
THE "HEATER"—*Eagle himself.*



THE "CATCHER"—*He keeps them off the millionaires.*



THE "GUN-MAN"—*Not what the name implies.*



THE "BUCKER-UP"—*He holds them in against the gun.*

THIS IS EAGLE'S GANG. RIVETERS WORK IN GANGS; ARE HIRED AND FIRED IN GANGS; BECOME SKILLFUL AS GANGS. THE GANG IS THE RIVETER. AND THIS IS ONE OF THE BEST GANGS IN THE CITY OF NEW YORK also myths about the gun-man and the bucker-up, brothers named Bowers from some South Carolina town. They are said never to speak. Even in a profession where no man is able to speak, their silence stands out. The catcher is George Smith, a New Yorker. There are no stories about George.

The actual process of riveting is simple enough—in description. Rivets are carried to the job by the rivet boy, a riveter's apprentice whose ambition it is to replace one of the members of the gang—which one, he leaves to luck. The rivets are dumped into a keg beside a small coke furnace. The furnace stands on a platform of loose boards roped to steel girders which may or may not have been riveted. If they have not been riveted there will be a certain amount of play in the temporary bolts. The furnace is tended by the heater or passer. He wears heavy clothes and gloves to protect him from the flying sparks and intense heat of his work, and he holds a pair of tongs about a foot-and-a-half long in his right hand. When a rivet is needed, he whirls the furnace blower until the coke is white-hot, picks up a rivet with his tongs, and drives it into the coals. His skill as a heater appears in his knowledge of the exact time necessary to heat the steel. If he overheats it, it will flake, and the flakes will permit the rivet to turn in its hole. And a rivet which gives in its hole is condemned by the inspectors.

When the heater judges that his rivet is right, he turns to face the catcher, who may be above or below him or fifty or sixty or eighty feet away on the same floor level with the naked girders between. There is no means of handing the rivet over. It must be thrown. And it must be accurately thrown. And if the floor beams of the floor above have been laid so that a flat trajectory is essential, it must be thrown with considerable force. The catcher is therefore armed with a smallish, battered tin can, called a cup, with which to catch the red-hot steel. Various patented cups have been put upon the market from time to time but they have made little headway. Catchers prefer the ancient can.

The catcher's position is not exactly one which a sportsman catching rivets for pleasure would choose. He stands upon a narrow platform of loose planks laid over needle beams and roped to a girder near the connection upon which the gang is at work. There are live coils of pneumatic tubing for the rivet gun around his feet. If he moves more than a step or two in any direction, he is gone, and if he loses his balance backward he is apt to end up at street level without time to walk. And the object is to catch a red-hot iron rivet weighing anywhere from a quarter of a pound to a pound and a half and capable, if he lets it pass, of drilling an automobile radiator or a man's skull 500 feet below as neatly as a shank of shrapnel. Why more rivets do not fall is the great mystery of skyscraper construction. The only reasonable explanation offered to date is the reply of an erector's foreman who was asked what would happen if a catcher on the Forty Wall Street job let a rivet go by him around lunch hour. "Well," said the foreman, "he's not supposed to."

There is practically no exchange of words among riveters. Not only are they averse to conversation, which would be reasonable enough in view of the effect they have on the conversation of others, but they are averse to speech in any form. The catcher faces the heater. He holds his tin can up. The heater swings his tongs, releasing one handle. The red iron arcs through the air in one of those parabolas so much admired by the stenographers in the neighboring windows. And the tin can clanks.

Meantime the gun-man and the bucker-up have prepared the connection—aligning the two holes, if necessary, with a drift pin driven by a sledge or by a pneumatic hammer—and removed the temporary bolts. They, too, stand on loose-roped boards with the column or the beam between them. When the rivet strikes the catcher's can, he picks it out with a pair of tongs held in his right hand, knocks it sharply against the steel to shake off the glowing flakes, and rams it into the hole, an operation which is responsible for his alternative title of sticker. Once the rivet is in place, the bucker-up braces himself with his dolly bar, a short heavy bar of steel, against the capped end of the rivet. On outside wall work he is sometimes obliged to hold on by one elbow with his weight out over the street and the jar of the riveting shaking his precarious balance. And the gun-man lifts his pneumatic hammer to the rivet's other end.

The gun-man's work is the hardest work, physically, done by the gang. The hammers in use for steel construction work are supposed to weigh around thirty pounds and actually weigh about thirty-five. They must not only be held against the rivet end, but held there with the gun-man's entire strength, and for a period of forty to sixty seconds. (A rivet driven too long will develop a collar inside the new head.) And the concussion to the ears and to the arms during that period is very great. The whole platform shakes and the vibration can be felt down the column thirty stories below. It is common practice for the catcher to push with the gun-man and for the gun-man and the bucker-up to pass the gun back and forth between them when the angle is difficult. Also on a heavy rivet job the catcher and the bucker-up may relieve the gun-man at the gun.

SPIDER
How to get to be a riveter. But don't fall first.

The weight of the guns is one cause, though indirect, of accidents. The rivet set, which is the actual hammer at the point of the gun, is held in place, when the gun leaves the factory, by clips. Since the clips increase the weight of the hammer, it is good riveting practice to knock them off against the nearest column and replace them with a hank of wire. But wire has a way of breaking, and when it breaks there is nothing to keep the rivet set and the pneumatic piston itself from taking the bucker-up or the catcher on the belt and knocking him into the next block.

Riveters work ordinarily eight hours a day at a wage of $15.40 a day. They are not employed in bad or slippery weather, and they are not usually on the regular pay roll of the erectors, but go from job to job following foremen whom they like. There is no great future for a riveter. A good gun-man may become an assistant foreman, a pusher, whose duty it is to keep the various gangs at work. But pushers are only used for such work on very large jobs.

It would perhaps be more accurate to say that a riveter's future is not bright at all. The rates charged for compensation insurance are generally accepted as the best barometer of risk. Starrett Brothers & Eken fix, in their insurance department, a rate of

$23.45 per $100 of pay for erecting and painting steel frame structures. Rates of other companies run to $30 per $100 of pay. The only higher rate is for wrecking work. The next lower rate ($15.08) is for building raising. Masonry is $6.07 and carpentry $4.39. Figures on industrial accidents published by the U. S. Department of Labor bear the same connotation. In one year the frequency of accidents, per 1,000,000 hours' exposure, was 228.9 for fabricators and erectors as against 54 for general building.

There was an adage at one time current to the effect that it cost a life to a floor to build a skyscraper. The computation may have originated with a famous downtown building of fifteen years ago in which, with the steel at the fifth floor, five deaths had already occurred. (The Travelers Insurance Company, called in to take over the insurance in that case, made a study of the conditions of the job, recommended certain changes, enforced its own supervision, and saw the remaining thirty-two stories built with but one more fatality.) Or the saying may have arisen and may have been true in the days of ten-story skyscrapers. But to apply it, like the architect's 6 per cent fee, to seventy-story buildings would be pure extravagance. Nevertheless a bloodless building is still a marvel. Five Hundred Fifth Avenue, which has had no deaths to date, is used as an object lesson for builders by the insurance companies, and the Chrysler Building, which was built with the loss of one life, was awarded a certificate of merit by the Building Trades Employers' Association. Four men were killed on The Manhattan Company job, and five were reported to have been killed on the Empire State by the middle of July. In general, deaths run from three to eight on sizable buildings. These figures, in the opinion of the Travelers company, are excessive. The Travelers would allow a builder two at the most.

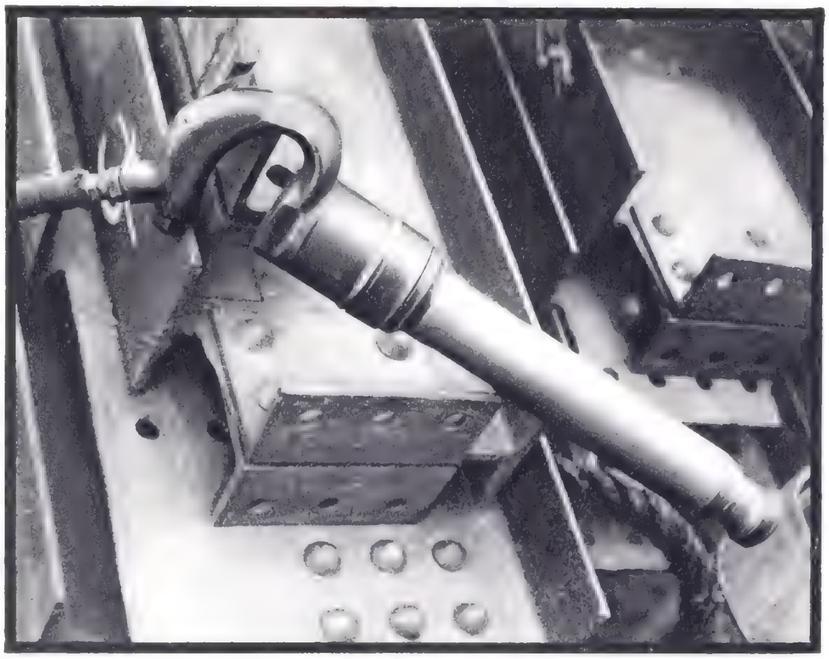
Such accidents are of course expensive, but injuries short of death are more costly. Liability of $875,000 for deaths was incurred in the building trades in the New York district in the last six months of 1928, and $3,145,586 for deaths and injuries. The total of both for the same period in 1929 was $3,885,881.

The safety campaign in the construction industry is blocked by various causes of which the novelty of skyscraper construction and the prevalence of shoestring construction projects are two of the most obvious. More important than either, however, is the attitude of construction workmen. Their trade inures them to danger and they are, as a class, as willing to take risks for others as for themselves. A riveter who has seen three or four hundred red hot rivets a day kept off the heads of the members of the Stock Exchange by an old tin can gets used to the idea. In a recent accident case a man had been injured in the street by the fall of a hammer in use on a building half a block away. No possible wind velocity would account for the drift. The only explanation was that the hammer had been thrown from one man to another. And had missed.

TOOLS

A riveter's gun will strike 1,000 blows a minute.

AROUND the walls of an Egyptian tomb there will be paintings of the workmen and the tools employed in its construction: carpenters with their adzes and masons with their trowels. FORTUNE in the photographs presented with this series attempts a similar record of skyscraper construction. There are obvious differences in the manner. And there is one difference in the matter which is sufficiently striking. Certain of these photographs are photographs of machines without their men.



THE CRICKET

You have heard them in the metal on a bright day. This is what they look like. Thirty-five pounds. Bright steel barrel. Sanded steel grips. Trigger on the handle. Rivet set upon the business end.

The reason is not merely that some modern tools are practically automatic. The reason is that certain tools used in skyscraper construction are more necessary to the work than any man and are of the first and most dramatic importance to a representation of the process.

The Steel Erector's Derrick.—These unequal scissors that open and close against the sky and haul themselves up by their arms like iron crabs, two stories at a time, are really the builders of the metal work. Their mechanism is simple and their principle is of ancient date. A three-part boom of latticed steel, spliced together by bolts to a length of seventy-five or a hundred feet, hinges to the base of a mast fifteen feet longer. The mast is guyed by eight or ten steel cables. A fall line reeved through pulleys at the end of the boom raises and lowers the load, and a topping lift from the boom's end to the mast top narrows or widens the angle between the two. All this, substituting wooden spars for steel, was commonplace to the Egyptians. But in operation the whole scene is changed. An engineer on the skeleton steel of the tenth floor, obeying the tinkle of an electric bell and seeing nothing of what he does, swings the boom of a derrick on the thirtieth out over the street, lowers away on his fall line, picks a girder cleanly off a truck at street level, raises it and swings it as neatly into place as a watchmaker assembling his microscopic parts. To an observer on the thirtieth floor, the derrick seems to act of its own will. And when, as on the Empire State Building, a company of five or six are in action together on the top of the standing steel, the illusion is complete. Thirteen Clyde derricks were gathered for that job. At Forty Wall, Levering & Garrigues, who build their own, had five working at one time. An unrigged derrick costs $3,800, a rigged derrick $5,000, and a derrick engine $4,500.

Steam Shovels.—These are now usually gasoline shovels because the steam rig requires a licensed engineer to fire the boilers. But actual steam shovels were used on the Forty Wall site. A modern shovel costs about $14,500. It can dig a yard and a quarter, water measure, at a thrust. Excavation is paid for by the cubic yard, the price running from $3.50 for earth at five feet depth to $13.50 at thirty feet. But hard rock costs $10 at five feet.

A shovel crew is made up of the engineer and his helper. The helper stands in the pit. The engineer sits in the box car on the caterpillar treads and works his levers. His car can move in every direction save skyward. He pulls the swing lever and rotates his shovel to the bank where he intends to dig. He lowers the boom. Another lever manipulates the crazy elbow of the crowding device and jabs the shovel forward. The engine quivers. The car, balanced by its five ton counter weight, heaves forward on its caterpillar treads. The shovel rises, spilling the loose loam. If the excavating is being done at a considerable depth the shovel will be emptied into a dipper dropped from a hoisting derrick standing at street level. The hoisting derrick is on a circular platform over the pit. On the platform stands the hoist engineer's apprentice watching the steam shovel and the two laborers who work with

Sweat

In advertising, as in industry, successful production is accompanied by sweat. Sweat purges advertising of the sins of superficiality—hair-trigger conclusions, sketchiness, conjecture, misdirection, hunches, necromancy. Sweat carries away the fat, leaving the bone and sinew of an idea. One of the principles on which this agency was founded is this: that only by working harder than the other fellow—by digging deeper for ideas—can outstanding advertising be created. In seven and a half years, Young & Rubicam has never sought a short cut.

YOUNG & RUBICAM · INC·
ADVERTISING
NEW YORK · PHILADELPHIA

it. He gives the engineer the signal to raise. The engineer sits beside his engine on a wooden bench in a temporary shed twenty feet from the derrick, the derrick cables winding and unwinding on his drums. He works three levers with his hands and two with his feet. At the signal of his apprentice's hand, which he must always watch, the hoist bucket swings clear and pulls out of the pit. The derrick circles until the bucket hangs above a waiting truck. A workman on the truck guides it. It opens. The earth spills out. The truck driver folds his *Graphic* and jams his engine into gear.

Riveter's Gun.—One similar to those employed in skyscraper construction will strike something under a thousand blows with a three or four pound steel slug per minute. A workman who could strike sixty similar blows in a minute would be an excellent workman, and he wouldn't last long. Which may not justify riveters' guns to the citizens of New York or Chicago or Houston. Asking such people to admire a riveter's gun is like asking Marie Antoinette to admire the efficiency of the guillotine. But which, nevertheless, does justify them. With carrying charges in skyscraper construction running into thousands of dollars a day and penalties for tardy completion involving sometimes the loss of the better part of a year's rent, no man could afford to build a skyscraper without riveting hammers. And until electric welding is made safe for buildings over ten or twenty stories, the citizens of New York and Chicago and Houston will simply have to like the noise.

A riveter's gun is a steel tube with a steel plug at one end and a handle at the other. The steel plug is held against the rivet head. A free plunger is driven back and forth in the tube by compressed air. The air supply is controlled by a trigger attached to the handle.

Guns of this type cost about $65 and are owned by the erectors. Air compressors of the stationary type used on Forty Wall are rented by the builder for the job. They cost originally $1,600 and each compressor feeds, by metal tubes and hose leads, eight or nine guns, providing each with thirty-five cubic feet of air per minute. Fifty guns were in use on that job at one time. Costs of operating including labor run to forty or fifty cents a rivet, the average number of lighter rivets being 400 a day and of heavier rivets 200.

ED RADIGAN

Portrait of a prize-winning laborer.

THERE are two things about Ed Radigan. One is that he got the Certificate of Superior Craftsmanship (with Gold Button) for structural iron work on The Manhattan Company Building at Forty Wall Street. When a great skyscraper is near completion the New York Building Congress gives out its awards for the best work done in each of the various trades. The laborers nominated by their foremen gather in the lobby of the building with its unfinished bronze and marble and its painters' scaffolds and its dangling lights. The owner comes in. Some dignitary from the builder's office makes a suitable speech. There is a round of appropriate applause. And the buttons are handed out.

The other thing about Ed Radigan is that he has had a fine life. He has had the kind of life only a steel worker, and only a steel worker in America, could have. Since he was sixteen he has worked the noble metal and seen the world. He has seen Mexico and France and California and Oklahoma and Philadelphia and Cabin Creek. He has handled boilers and pipe and beams. He is thirty-eight years old. He is quick on his feet, heavy-set, tall, active, a good drinker, a great talker, a very strong, reckless eloquent man. And he loves steel.

ED RADIGAN

A steel-working man, a rod-rider, a doughboy, and a gob.

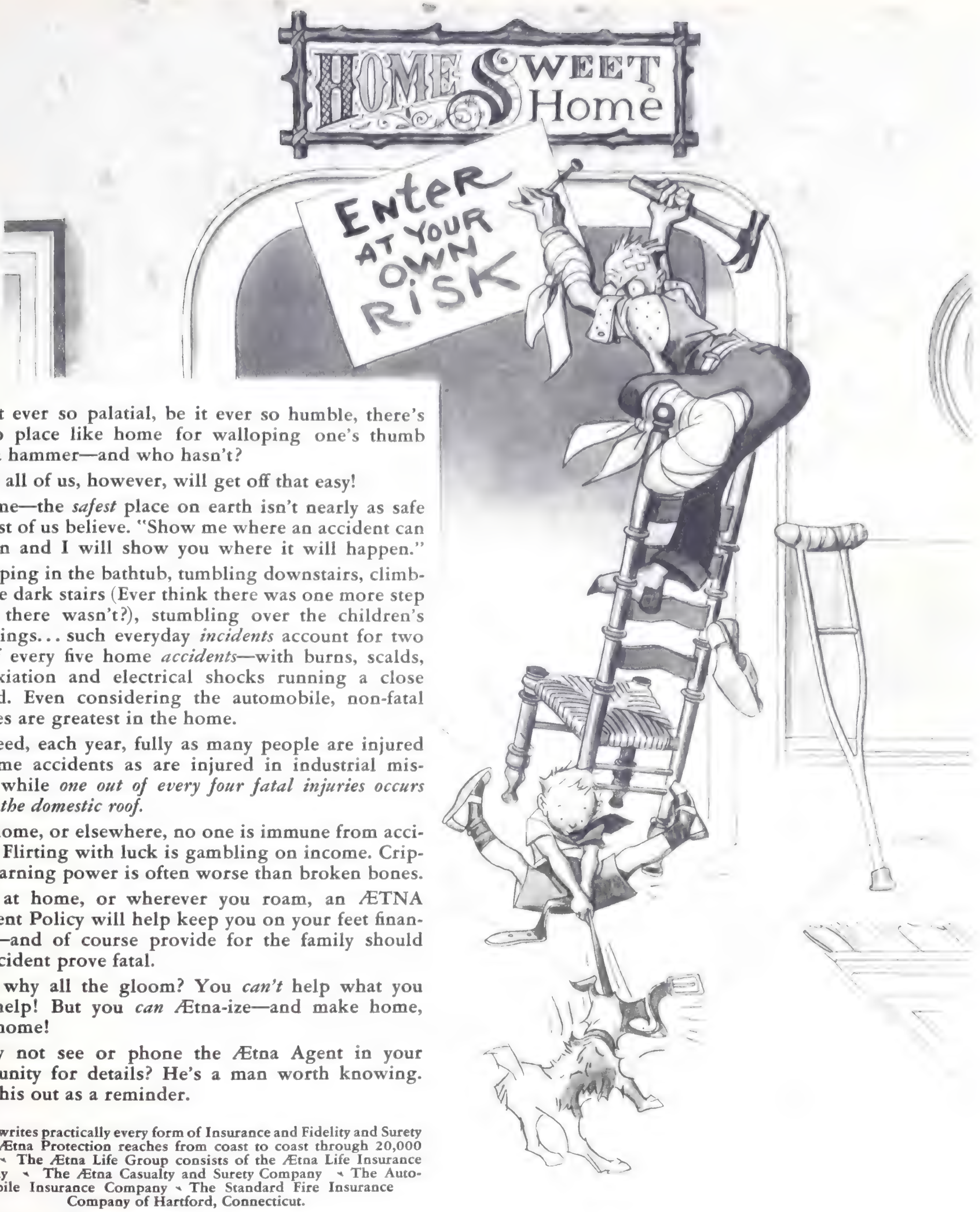
He started working it in Providence in 1908. He lived in Providence with his father, "the grandest Irishman in the whole of America," and he went to school in Providence. After school he took to pipe fitting. But like most men with a calling in life, he was at first obstinate. He went to sea. For three years he worked oil tankers up and down the coast—from Boston to New York to Savannah to Tampico, coasting the Florida Keys in the long procession of ships that edges in from the Gulf Stream current to the Barrier Reef, watching Dry Tortugas and its light go under. His first ship was the Texas Oil Company's *Louisiana.* He was an oiler on that run. His second ship was the *Magnolia.* He was a deck hand on the *Magnolia.* When the *Magnolia* put in at Port Arthur, Texas, he left her and tried the town. The result of that was a quartermaster's job on the Texas Company's *Dallas.* The *Dallas* put in at Tampico, crossed the Gulf, ran north and east with the green water, and ended up at Portland, Maine. At Portland, Radigan left the sea. He was twenty, he had been roving a long time, and at last he knew what he was going to do. He was going to work at steel.

His first jobs were on boilers and tanks. The tanks carried him by train across the states to Oklahoma. For a long time, in Tulsa, in Cushing, in the small towns of that country he followed his trade, riding the rods from one freight yard to another or getting lifts on trucks. Once he rode the rods from Cushing, Oklahoma, to Casper, Wyoming. He learned to rivet, to lean in on the gun with the slippery barrel in one hand and the air trigger against the other palm, to get his buttons even on the rivet end. Finally he went east. He was foreman on an oil tank job at Perth Amboy. He did boiler work in Fall River, taking the old side-wheeler up through Hell Gate and Long Island Sound. And finally the War overtook him. He was drafted from Providence, sent to the Seventy-eighth at Camp Dix, and shipped to France. In France he saw a bit of St. Mihiel and the Argonne and learned the doughboys' first lesson, which was to drink cognac in small glasses. He liked the War, too. It wasn't such a change from steel.

Radigan's first taste of derrick work was at Kittery, Maine, on the bridge from Portsmouth to Kittery. Since then he has done derrick work and riveting on building construction jobs up and down the Atlantic seaboard. When he rivets, he holds the gun. He doesn't catch, and he doesn't heat. He drives them in. When he is on derrick work, he is a connecter—out on the ends of the groggy steel screwing the temporary bolts in while the derrick cable holds the member on which he is working. At Forty Wall he was a connecter. It was fine work. There was a lot of steel. And a lot of men handling the steel. There were about 16,000 tons of steel and five crews to lay the lot of it.

So far as the risk goes—he was a year in France, three or four months at the front, and they didn't touch him. And he has swung out over the streets of half a dozen cities on a derrick fall with nothing to show for it. But riveting is different. Once the ropes holding the riveters' platform broke, and once in freezing weather after a fine rain he slipped on a scaffold and went down. That time he fell four stories. They picked him up with a broken arm and a broken leg, and it took four months in the hospital to fix him.

The rest of Radigan's story is the domestic part. Its outlines are familiar. You can't rove forever. He is married. ("Yes," he says, "and badly.") He has a Rickenbacker car, no children, and a two-family house in Providence. When he can't work steel, he'll live in the other half. Maybe.


HOME SWEET Home
Enter AT YOUR OWN RISK

BE it ever so palatial, be it ever so humble, there's no place like home for walloping one's thumb with a hammer—and who hasn't?

Not all of us, however, will get off that easy!

Home—the *safest* place on earth isn't nearly as safe as most of us believe. "Show me where an accident can happen and I will show you where it will happen."

Slipping in the bathtub, tumbling downstairs, climbing the dark stairs (Ever think there was one more step when there wasn't?), stumbling over the children's playthings... such everyday *incidents* account for two out of every five home *accidents*—with burns, scalds, asphyxiation and electrical shocks running a close second. Even considering the automobile, non-fatal injuries are greatest in the home.

Indeed, each year, fully as many people are injured in home accidents as are injured in industrial mishaps, while *one out of every four fatal injuries occurs under the domestic roof.*

At home, or elsewhere, no one is immune from accidents. Flirting with luck is gambling on income. Crippled earning power is often worse than broken bones.

But at home, or wherever you roam, an ÆTNA Accident Policy will help keep you on your feet financially—and of course provide for the family should the accident prove fatal.

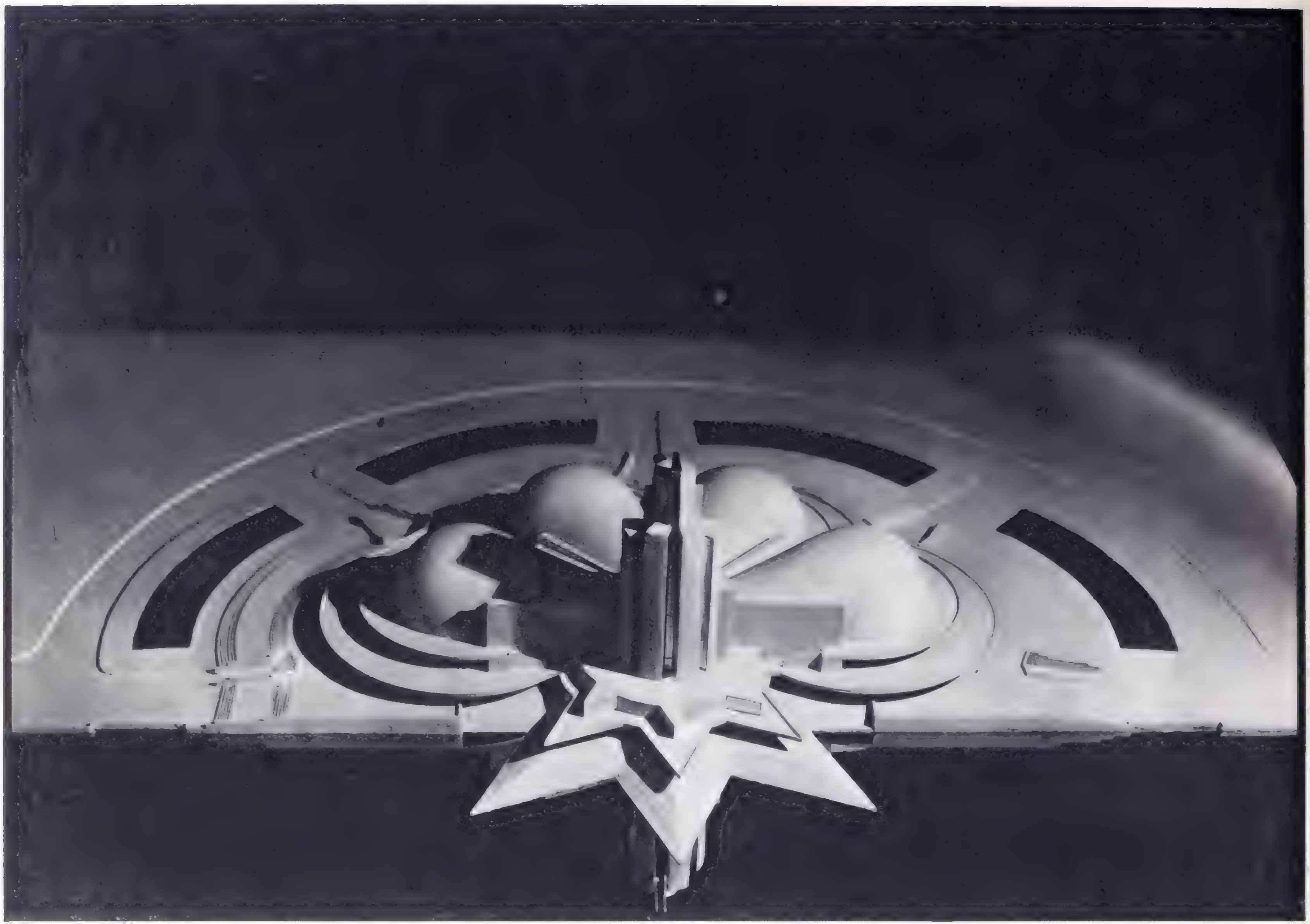
But why all the gloom? You *can't* help what you can't help! But you *can* Ætna-ize—and make home, *sweet* home!

Why not see or phone the Ætna Agent in your community for details? He's a man worth knowing. Tear this out as a reminder.

Ætna writes practically every form of Insurance and Fidelity and Surety Bonds. Ætna Protection reaches from coast to coast through 20,000 agents ⸱ The Ætna Life Group consists of the Ætna Life Insurance Company ⸱ The Ætna Casualty and Surety Company ⸱ The Automobile Insurance Company ⸱ The Standard Fire Insurance Company of Hartford, Connecticut.

ÆTNA-IZE

SEE THE ÆTNA-IZER IN YOUR COMMUNITY – HE IS A MAN WORTH KNOWING



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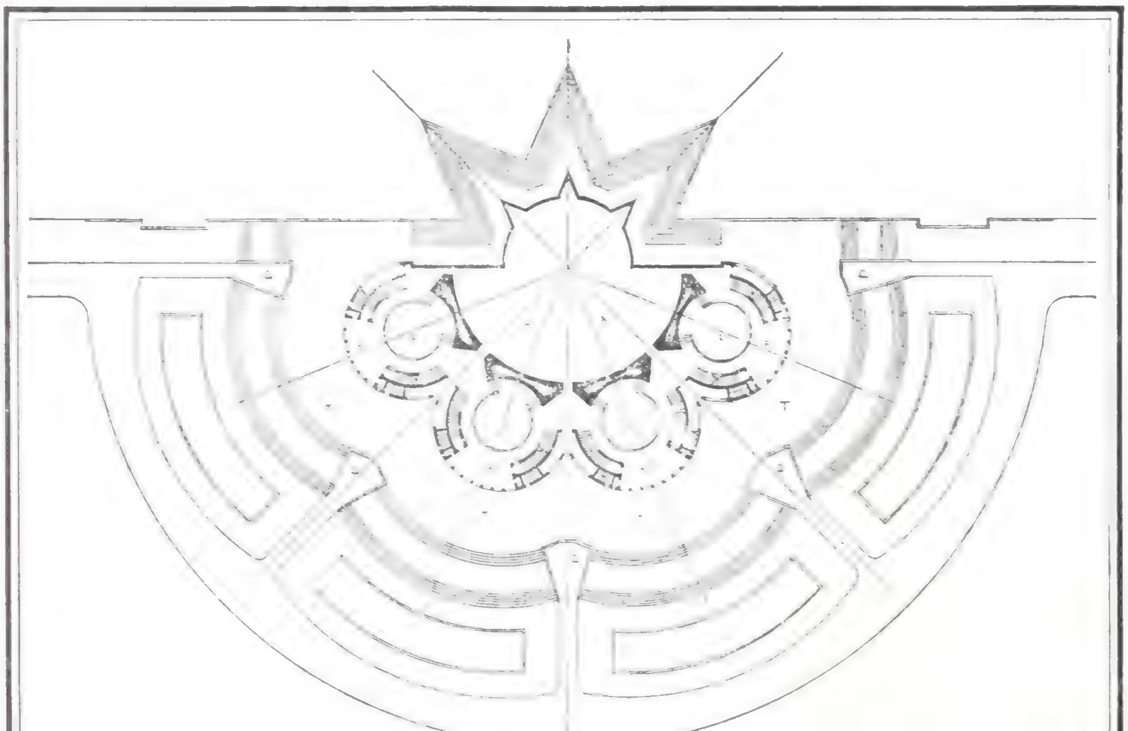

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PLANS FOR A "TEMPLE OF MUSIC" AUDITORIUM PROPOSED FOR THE CHICAGO WORLD FAIR

Norman Bel Geddes, brilliant stage designer and architect, factually describes the above-planned structure as "an auditorium for various sized audiences that may be enclosed or open air, with a tower for carillons, rehearsal rooms, studios, offices, and dressing rooms." The auditorium has a seating capacity of 10,000 persons, an orchestra of 200 pieces, and a chorus of 600. Built without posts or balconies, the auditorium is in four sections, each enclosed by its own dome, which may be open or closed. Partitions close off the various portions so that the size of the audience may be reduced to 1,200 persons. There are terraces, the studio-and-office carillon tower, and docks for those who arrive by water. The basement is capable of holding 1,720 parked automobiles. Four lanes of traffic make it possible for 100 cars to unload per minute.

INDUSTRY GETS THE GREEN LIGHT . .

Bears are pulling their punches and signs are now seen here nd there of a quickening of the industrial tempo . . . automo- ive plants are swinging back into line . . . even basic industries re getting under motion. The new drive is on!

That you may make the most of industry's upswing, you ad best take careful stock of your present facilities, keeping n mind that proof of the plant is profit . . . that obsolescence n equipment and methods are serious drags upon earnings nd a source of constant waste.

If indeed, you *do* have a white elephant on your hands, now s the time to scrap it because the cost of building is lower than t has been for years . . . there never has been a better time o strengthen the weak spots in your industrial armor.

By enlisting Austin Engineers you are assured that good engineering, always worth many times its cost, will arm your new manufacturing facilities with the best in design . . . with efficient layout for straight-line production. Subsequent savings in operating costs will make profit margins possible.

Distribution costs can likewise be lowered by branch plants, warehouses or display facilities . . . for "spot stocks" are vital in these days of low inventories . . . the man who can deliver first gets the order.

To any problem of design and construction, whether it be a single warehouse or a complete industrial plant, the Austin-Method* brings practical economies in design, which make possible low-cost construction and reduced building investment.

THE AUSTIN COMPANY

THE
AUSTIN
METHOD

***The Austin Method of Undivided Responsibility**

Is a merging of the functions of architecture, engineering, construction and equipment into one integral service . . . you cover the entire project by the terms of a single contract. Low total cost, high quality of workmanship and materials, and a definite completion date guaranteed . . . bonus and penalty clause included if desired. Your requirements are answered by completed facilities, delivered broom-clean, ready for occupancy. A service localized through 16 Austin offices — Coast to Coast.

ENGINEERS AND BUILDERS . . . CLEVELAND

The Magnificence of Morgan

Is lost in the mutual misunderstandings of business and letters.

IN the 1,063 pages of the *Oxford Book of English Prose*, some 315 excellent writers of English and several accomplished composers of Latin prose treat of almost every subject in the world. Except one. Between 1326 and 1915 these chosen gentlemen with practical unanimity neglected to mention business. On page 825, however, Author No. 224 does so, with two paragraphs in description of the kind of man who interests 1930 more than any other:

> I can imagine nothing better in theory or more successful in practice than private banks as they were in the beginning. A man of known wealth, known integrity, and known ability is largely entrusted with the money of his neighbors. The confidence is strictly personal. His neighbors know him and trust him because they know him. They see daily his manner of life, and judge from it that their confidence is deserved. . . . Even in large cities, as cities then were, it was possible for most persons to ascertain with fair certainty the real position of conspicuous persons, and to learn all which was material in fixing their credit. Accordingly the bankers who for a long series of years passed successfully this strict and continual investigation, became very wealthy and very powerful.
>
> The name "London Banker" had especially a charmed value. He was supposed to represent, and often did represent, a certain union of pecuniary sagacity and educated refinement which was scarcely to be found in any other part of society. In a time when the trading classes were much ruder than they now are, many private bankers possessed a variety of knowledge and a delicacy of attainment which would even now be very rare. Such a position is indeed singularly favorable. The calling is hereditary; the credit of the bank descends from father to son: this inherited wealth soon brings inherited refinement. Banking is a watchful, but not a laborious trade. A banker, even in large business, can feel pretty sure that all his transactions are sound, and yet have much spare time. A certain part of his time, and a considerable part of his thoughts, he can readily devote to other pursuits. And a London banker can also have the most intellectual society in the world if he chooses it. There has probably very rarely ever been so happy a position as that of a London private banker; and never perhaps a happier.

This little aside in Walter Bagehot's general essay about business is the only respectable sketch of the late John Pierpont Morgan that has ever been written. And it was done by a scholarly amateur of affairs who had never heard of Morgan, at a time when the latter was an apprentice clerk just out of a German university.

What can we read about Morgan today, seventeen and one-half years after his death? *Morgan The Magnificent, The Life of J. Pierpont Morgan*, by John K. Winkler. just off the press called Vanguard ($3.50), is not by any means trash. It is informative, bright, rapid of pace. The Connecticut atmosphere of the ancestors and of Pip Morgan's childhood is pleasantly communicated. The London clerkship, the arrival by packet in the Manhattan of 1857, the "Western Blizzard" panic of that tragic year, the queer little deal in 2,500 Civil War carbines and its suite of famous "Deadhorse" claims, the youthful speculation in gold, the impetuous marriage to the dying Amelia Sturges—Mr. Winkler has dug it out of the old newspaper gossip files and tattle books pretty thoroughly. He is not a bore. But he is also not a biographer. He is a Hearst newspaper man who retired from sixteen years of star anonymity to the instant recognition of the magazine article business. It is not remarkable that he does not do it better, but it is astonishing that with his baggage he can do it at all.

* * *

Mr. Winkler's effort simply goes to confirm the sad fact that the most colorful figures of modern America are fading from the public memory, leaving behind nothing but bad portraits and indifferent biography. There are enough books. There are little scandal sketches about the crookeder side of Wall Streeters. And there are enormous, fatuous encyclopædias, made or in the making by ghost-writers who slumber under the easy censorship of vanity. But there is no real analysis and no real writing. The true literary world will have none of business. Why?

One must listen to this learned world first:

I.—There are no properly equipped historians in America who know anything about business. Our economists and sociologists are outlandishly theoretical and naïve. They are doctrinaire to a man. Veblen's famous "idle curiosity" which is the scientific spirit was Norwegian like Veblen. Social workers cannot discover the history of barter, usury, and promotion. Such professors as we have are ladies on this battlefield. The milk and water of our new politics is their fare.

II.—The Yankee business world has had a tendency, now passing, to organize itself against any such foolishness and danger as literature. How is a scholar, helpless without original sources, to do any research? There are no original sources. Business men don't keep any. They burn them up, if there are any at all. Look at Wall Street windows late of a winter afternoon. Through pane after unending pane along the vita-glassed canyons one sees conferences, tables packed close with men talking, nobody writing down anything. When they are not talking to each other, they are telephoning. It is a great waste of time to write anything; it is also dangerous. Even the Stock Exchange keeps no record of its transactions.

III.—The talented commentators, critics, writers who were born into business or who have drifted into it by accident are bought up and snuffed out. The only two unlearned professions in the U. S. which pay better than that of the salesman are those of the ghost-writer and the press agent. There are authors of orations and editorial articles by trust company presidents whose daily stipend is greater than the monthly honoraria of serious literary persons.

What does the business world say about history and biography?

I.—Publicity means favorable publicity. Uninstructed scrutiny of business is destructive, not constructive, because it unsettles the social state. It provokes ignorant hatred, aggravates dangerous tendencies, changes nothing, does nobody any good.

II.—To pay to have anything written about one's self or one's business is vulgar. It is excusable only in a man so senile that he thinks he is holding up an example to youth and posterity. To allow anybody to find out anything about one's affairs or one's career, or that of an ancestor, is bad taste and dangerous. A gentleman exposed to the harsh light of letters is a gentleman gone wrong.

* * *

These are only a few random reactions, as they say so clinically in business. Mr. Winkler knows them all. The Morgan family certainly did not help him with any clippings. Previous books did little for him. His industry in the old newspaper files was enormous. The only oral material that he picked up was about the mistresses, previously unpublished. Here his copy has been properly checked by a libel lawyer; the only ladies he names are dead. His financial knowledge is small, which is all right. He has evidently not been down to Wall Street for a great many years, for he thinks that the House of Morgan still inhabits the old funny building, which was a charming structure. He admires Morgan in a horrified kind of way, but he has no understanding of the profoundly Prussian nature of the old man. A mathematician from Bismarck's own university with a flair for the arts is a difficult piece of newspaper reporting, after all. The most prodigious of recent creatures will have to wait for a biographer with race, baggage, and temperament. Some yet unborn American Voltaire will have a lot of fun with the subject.

When you have items for collection in NEW ENGLAND *send them to* THE FIRST NATIONAL BANK *of* BOSTON *New England's oldest and largest financial institution, with which a majority of the banks in this territory carry their accounts.*

The FIRST
NATIONAL BANK *of*
BOSTON

Maksoud of Kashan

[*Continued from page 50*]

was one of the great events of the century in its effect on Western taste.

Rare

If nothing were known of Italian painting prior to the year 1800 but the names of three painters and if only three canvases existed which could possibly be attributed to a period earlier than the 15th century and if only a few pictures remained from the 15th century itself, Italian painting would be about as common as Persian rugs. The centuries of Persian greatness and the centuries of Italian greatness do not, of course, coincide. But the reference to Italy is not too far-fetched. Tamerlane, second Mongol conqueror of Persia, died in 1405. In 1502 Shah Ismael, of the family of the Sefavids, defeated the Turkomans and founded a new dynasty in Persia with his capital at Ardebil east of Tabriz and near the Caspian. His son, Shah Tamasp, fixed the capital at Tabriz. And his grandson, the great Shah Abbas who finally expelled the Turks, set up his royal city at Ispahan. From 1586 to 1628 he ruled the ancient kingdom of Iran. He was the "Great Sophy" to whom Elizabeth sent her ambassador and from whom she received gifts. He sent into Italy for painters and architects, and the work of Italian hands is still to be seen in the Palace of the Forty Columns at Ispahan. Under his rule the arts of poetry and weaving flourished. And with his name is still associated every decent bridge and sound piece of ancient road in the empire. If Persia had no Quattrocento, at least its golden age did not lag far behind the great age of Italian painting.

And it is true that only three names of master weavers remain to us. In a panel of the superb carpet from the Ardebil Mosque now in the Victoria & Albert Museum, there is an inscription which reads: "I have no refuge in the world other than thy threshold: my head has no protection other than thy porchway; the work of the slave of the holy place, Maksoud of Kashan, in the year 946." The year of the hegira 946 is the year 1540 after the birth of Christ. The rug was therefore woven during the closing years of the reign of the Shah Ismael. But of its weaver, other than the fact that he could quote Hafiz and was a master of all masters in his art, nothing is known. "Thy slave," is *votre service* in Persian. Two other rugs are similarly signed, one, in 1542 by Ghiyath ed-Din Jami and the other in 1661 or 1671 by Ni' met-ullah of Joshaghan. Of early rugs themselves, two of the oldest, formerly the property of the late C. F. Williams of Norristown, Pennsylvania, were in the Metropolitan Museum in New York. And the first rug reproduced herewith is an extremely early piece from the collection of Mr. Vincent Robinson of London, bought by the Metropolitan Museum at the Yerkes sale.

Not only are Persian antique carpets rare at the moment. They will continue to be rare. There are no more where these came from. Most of the great mosques but the mosques of Kum and Kerbela have been robbed of their rugs and private owners who had rugs worth selling have, for the most part, sold them. It is possible that some out of the way village may discover a pair or so of old pieces, but it is quite certain that the market will never be flooded with such finds. And so far as the modern manufacture of Persian rugs is concerned, the collectors have little to fear from that source. Modern rugs are now made in Persia to the order of European and American sellers on designs specified by the seller ("Our number 806: color—our combination number 731"). The wools are for the most part English in origin. The dyes are largely of Western manufacture and some yarns are sent into Persia for weaving already dyed. Continual oversight is maintained to see that the peasant weavers follow the designs given them—i.e., to see that they make no innovations or alterations such as their own Persian sense of rug weaving might suggest. And the finished product, once delivered in New York, is sent over to Hoboken for an acid bath which will give the colors that old rich sheen so much admired on Park Avenue. After which (if the colors have stood the bath, or after a bit of touching up with pigment and glue if they haven't) the rug is ready for sale. Not even the newest rug fancier would be fooled by it.

The big books

The serious objection to the egg as a collectioneer's object is neither its cheapness, its commonness, nor the way it resembles itself. It is the fact that there is so little to be said about it. And it is on that score that the Persian rug really establishes its superiority. There is everything to be said about Persian rugs. Enormous volumes have been written saying it. And when it is all said, additional information from within the Mosque of Kum may make it necessary to unsay it all and start again. The great point of controversy is, of course, the identification of particular pieces. But the identification of pieces involves a knowledge of the categories of rugs, a knowledge of the knots, wools, dyes, and designs employed locally in the various rug-weaving sections of Persia, and a considerable knowledge of the invasions and the migrations affecting the life of those districts. The categories alone are sufficiently complicated. They are usually given geographically as follows: Herats, Khorassans, Mesheds, Ispahans, Kirmans, Yezds, Shiraz, Niris, Feraghans, Hamadans, Irans, Sarouks, Kashans, Sarabends, Burujirds, Sultanabads, Muskabads, Joshaghans, Sehnas, Bijars, Kermanshahs, Western Kurdistans, Persian Kurdistans, Karajes, Tabriz, Gorevans, Bakshis, Serapis, Herez, Suj-Bulaks, Karadaghs, Mosuls. But those titles are too precise to be accurate. A rug may be known in one country by the place where it is ordinarily marketed and in another by the name of the place where it is made. Mr. Pope therefore catalogues his rugs thus:

(1) A small group of severely designed medallion carpets from northwest Persia dating from the earliest part of the 16th century.

(2) Carpets from Kashan and the west of Persia dating from the 16th century. The famous Ardebil carpet is of this group.

[*Continued on page 102*]

The World's Greatest Persian Rugs

Arthur Upham Pope's selection of antique pieces

Great hunting carpet	Austrian State Collection
Its near mate	Baron Maurice Rothschild, Paris
Ardebil carpet	Victoria & Albert Museum
Animal carpet—red and dark blue	Victoria & Albert Museum
Great hunting carpet	Milan, from the late Queen Mother's collection
Behar carpet and its mate	Mrs. McCormick and Austrian Museum
Tree carpet	Estate of Mr. C. F. Williams
Medallion and animal carpet	Clarence H. Mackay
Its mate	Kaiser Frederick Museum
Another medallion with hunting scenes	Rosenborg Castle, Sweden
Animal carpet	Poldi Pezzoli, Milan
Animal and tree carpet	Princess Schwartzenberg, Vienna
Vase carpet	Edith Rockefeller McCormick
Vase carpet	Kunstgewerke Museum, Berlin

To which must be added the most famous of all rugs, the "Spring of Chosroes," a carpet 106 feet by 106 feet, woven in the 6th century for Chosroes I, Emperor of Persia, and cut to strips by the Arabs in 637 A. D. when they captured Ctesiphon. It was of silk, gold, precious stones, and silver and represented a pleasure ground with brooks and paths and trees and flowers. "The stalks of the trees were of gold and silver, the leaves and flowers of silk, the fruits of many coloured stones."

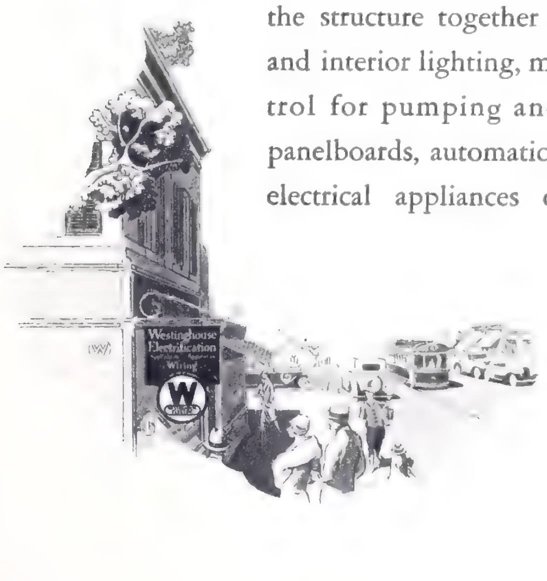
The SKYSCRAPER › › ›

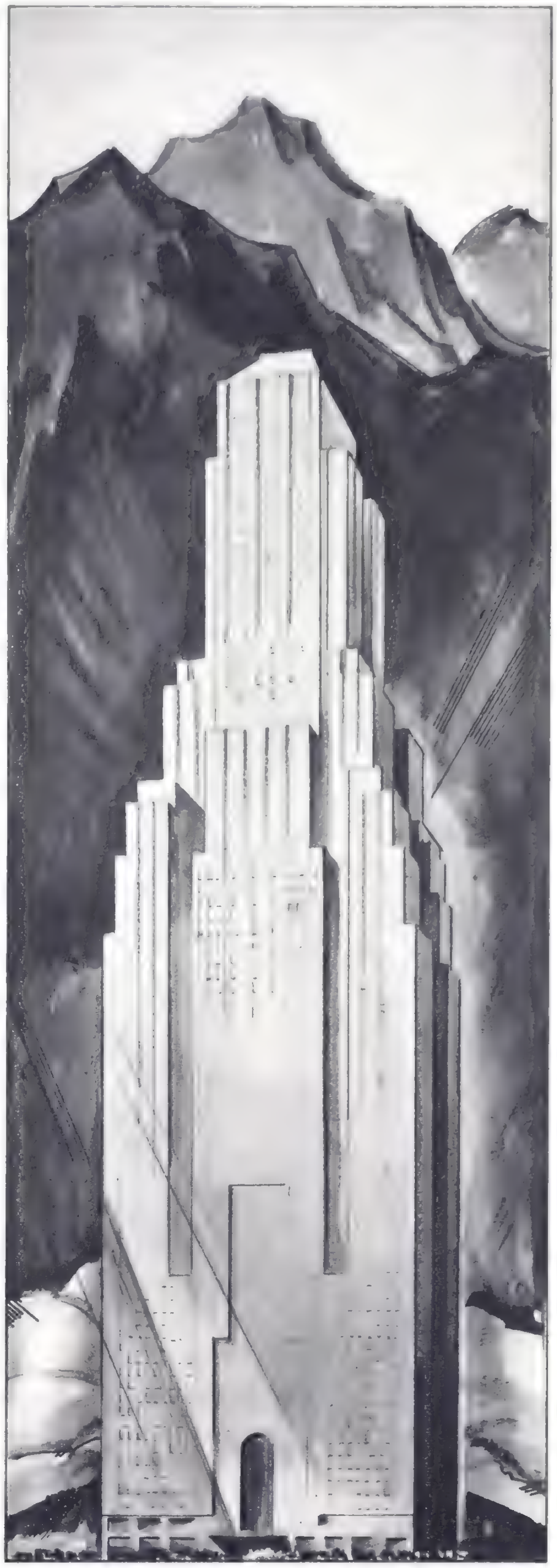
is so much Steel and Stone without Electricity

The cold, dark mass gradually rearing its head mountain-high on a busy down-town corner is a building—an impressive tribute to modern construction skill. But it cannot become a revenue-producing property—a busy office, a theater, or a luxurious hotel —until electricity has made it so. It is electricity that gives a building *life.*

Because of electricity, water flows hundreds of feet above surrounding levels, heat and fresh air circulate to inside, windowless rooms. On dark nights and sullen days electricity scatters sunshine throughout every nook and corner. Swift automatic electric elevators whisk you up or down in the twinkling of an eye, yet with a barely perceptible sense of motion.

In every phase of building and building equipment, Westinghouse is co-operating with architects and construction engineers to make steel and stone more serviceable — and more friendly. Westinghouse responsibility runs the entire course from the arc welding equipment that silently knits the structure together to the exterior and interior lighting, motors and control for pumping and ventilating, panelboards, automatic elevators, and electrical appliances of every sort.





Tune in the Westinghouse Salute over WJZ and the coast-to-coast N. B. C. network, every Tuesday evening.

Westinghouse

Maksoud of Kashan

[*Continued from page 100*]

(3) 16th century carpets from eastern Persia. This group includes the carpets known in America as "Ispahans, 16th century," which have long been the most popular of all antique carpets here. Over 1,000 of them are owned by American collectors. It seems to be well established that none of them were woven in Ispahan (but in Herat, in what is now Afghanistan), that few of them were woven in the 16th century, and that the greater number of them are inferior in workmanship and design. Their popularity is poetic—the triumph in commerce of one of the most beautiful names in the world.

(4) Carpets from central Persia: Joshaghan Ghali. This classification includes the small and beautiful group of "vase carpets" woven at Joshaghan Ghali for the palaces of Ispahan under the "Great Sophy." The largest, and perhaps the best of those still in existence, is owned by Mrs. McCormick.

(5) Silk carpets from the court looms of Ispahan—the so-called Polonaise carpets. These latter were exhibited at Paris in 1878 from the Czartoryski collection in Warsaw and owe their name to that accident.

To fit the particular rug into the proper category, the expert weighs the evidence of design, of knot, of tint, of material, etc. For example, the wool of a rug from the high, cold plateau country north of Shiraz (the divide, say, where the village called the Village of the Willow stands) will be good. The hairs will be long and smooth and flexible. Whereas the wool of a rug from the parched, low country will be inferior—harsh, brittle, and short of strand. In something the same way but for different reasons the colors of the rug are significant. Dyeing, in the great epoch, was done by families which passed on their discoveries from generation to generation as trade secrets. There were, therefore, slight differences in tone between wools dyed by one dyer in Tabriz and wools dyed by another in Ardebil. The following recipe for a Persian blue is taken from a manuscript written in India by an emigré who describes himself as the descendant of twenty generations of Tabriz dyers:

> Birbul's Blue. Take cinnabar, indigo, and alum, grind and sift lighter than the light dust of the high hills; soak for ten hours; keep stirring it; put in the wool and soak for many hours. Boil for three hours; wash in kurd water, water in which kurds and whey have been well beaten up; leave for three hours, and then wash and beat again in water.

The ancient dyes were, as this suggests, vegetable or animal in origin. The principal blues were from indigo. Certain reds were from the plant madder: others from the insect cochineal which lives on the oaks of the Mediterranean country (the females alone were used and 50,000 of them dried would weigh a pound). Yellows were from the leaves of sumach or from saffron, the product of the stigmas of the fragrant crocus. Green was from buckthorn, gray and brown from gallnuts, and reddish brown from henna. It was, and still is, judged that the best blues were Persian, the best reds Turkish, and the best yellows Chinese. And it is quite generally agreed that the colors of the great oriental rugs are the loveliest colors yet produced by man.

The customers

A rug dealer who finds himself possessed of an excellent and authentic piece of 16th century Persian weaving will not advertise his goods. He will write ten letters. And if the ten letters bring no results, he will probably put his rug in storage. The market is as limited as that. Of the few men rich enough to buy great rugs, only a small percentage are interested in rugs of any kind. Of that small percentage, only a fraction will be interested in this particular kind of rug. And of that fraction one or two will not be approachable. Mr. Edsel Ford, for example, does not wish it known that he buys rugs and the dealers are therefore in an agreeable conspiracy to keep him assured of the world's ignorance.

One of the foremost American collectors is probably John D. Rockefeller, Jr. His collection is limited to the so-called Polonaise rugs and the so-called Ispahans and therefore does not include any of the great archaic pieces. But his collection of Polonaises is the finest in the world and of enormous value.

The world's finest collection of Ispahans is owned by Joseph E. Widener of Philadelphia, Rembrandt collector and horseman. Mr. Widener's first purchase is said to have been made at Saratoga. There was a harangue by an Armenian merchant, a purchase by Mr. Widener irrespective of the harangue, and late that day an abrupt departure by the Armenian. "Damn that man Widener," he said. "He bought my decoy."

Edith Rockefeller McCormick's collection has less consistency. She owns the animal carpet from the collection of the Emperor of Austria mentioned above, a famous double-back Shah Abbas carpet, and the best of the vase carpets. But she has not specialized in any one kind of rug.

James F. Ballard, a drug manufacturer of St. Louis, differs from his wealthier rivals in the fact that he collects his own rugs on the basis of his own knowledge. There may be scholars who know more about rugs than Mr. Ballard, but there are few men who have backed their own judgment as he has done. He has traveled over the rug-producing countries, has been a prisoner of war in Adrianople, a witness of Armenian massacres in Smyrna, and the victim of a Turkish mob. And he has built up the best private collection of 18th and 19th century oriental rugs in existence. He has also been extremely generous. In 1923 he invited experts from the Metropolitan Museum to look over his collection and choose the rugs needed to complete the Museum's collection. They took 129 valued at about $400,000. In 1929 he gave seventy rugs valued at $250,000 to the St. Louis Art Museum. And he has recently purchased the collection of V. D. Cliff of Detroit for division between the two museums.

A collection similar to that of Mr. Ballard but considerably less important is that of George Hewitt Myers, banker, of Cleveland and Washington. His Textile Museum of the District of Columbia contains excellent later pieces and a few good Ispahans.

In addition to such collectors as these, there are purchasers of valuable rugs like Andrew William Mellon, Jesse Isador Straus, George Blumenthal, Mortimer Schiff, and Philip Lehman, who can be counted on to buy from time to time. And beyond are the unexploited fields of the newer fortunes.

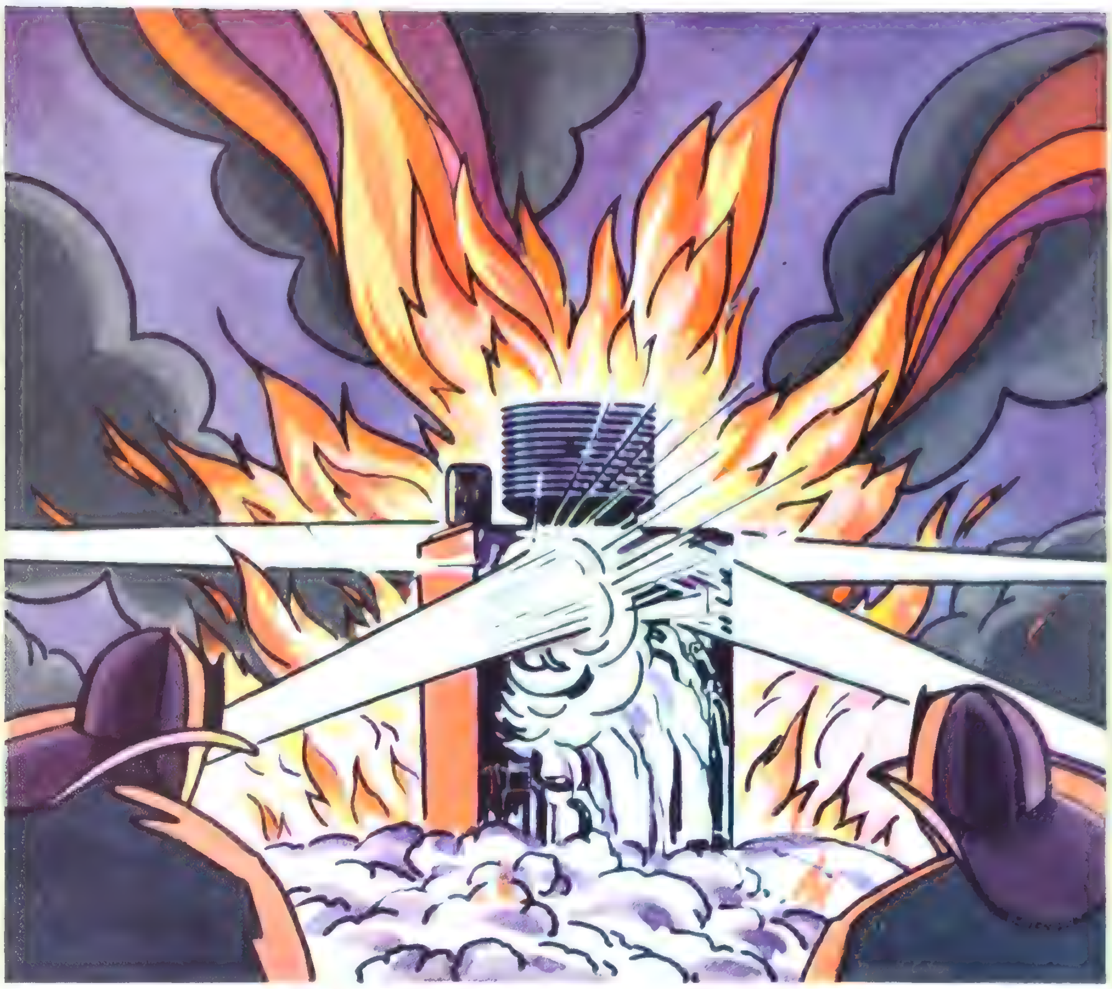
Match Boxes

[*Continued from page 69*]

lit one's cigarette or cigar to use the match as a taper and the cover as a shrine. To this the Catholic Church had no objection, but unfortunately wealthy Mexicans who either had expensive shrines or did not worship were in the habit of throwing the boxes into the gutter where they were apt to be trampled upon by horses or pedestrians. Against this desecration the Church protested, and manufacture of the cover was suspended.

Throughout the many designs, like a familiar refrain, appears again and again a *motif* of three. Why it was chosen no one seems to know, but three stars and the also familiar Vulcan design are probably the most widely used. The Llama design conceals a pun, for llama also means flame. These matches, sold in Peru, cost four cents a box (including the government tax). Dealers were in the habit of filching a few from each box and filling and selling other boxes. The company, therefore, sealed each box with a small sticker. For those who like such names, the two little figures shown looking at each other on the Dutch East Indies cover are called a "double Wajang."

There are many collectors of match box covers. As far as the International Match Corporation knows the first collector was a schoolboy from Indianapolis. He wrote to the company asking for covers and was given several hundred. A few weeks later the company had at hand a dozen letters from Indianapolis schoolboys. It was on the whole rather embarrassing. Most erudite of collectors is Professor J. D. Corrington of the zoölogical department of Syracuse University. He has been collecting for many years and has probably the best amateur collection in the U. S. To him the International Match Corporation refers all letters from collectors. It is reported that he has always refused to carry a cigarette lighter.



FIRE AND FLOOD AND RAGING BLIZZARD

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Never—through all its years of faithful service in the peace and quiet of a home—will the General Electric Refrigerator be required to withstand such tests as these. But what years of service may be expected from the refrigerator that *can* survive the most terrific ravages of time and wear! In the Monitor Top, the entire mechanism is fortified against air, dirt and moisture with impregnable walls of steel. Buried in sand, frozen in ice, drowned in water, roasted in flames, the General Electric Refrigerator still ran on!

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GENERAL ELECTRIC

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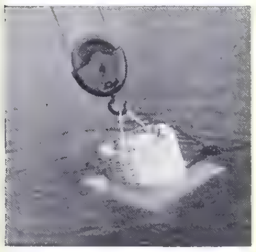
The following tests were made at Schenectady during February, 1930.

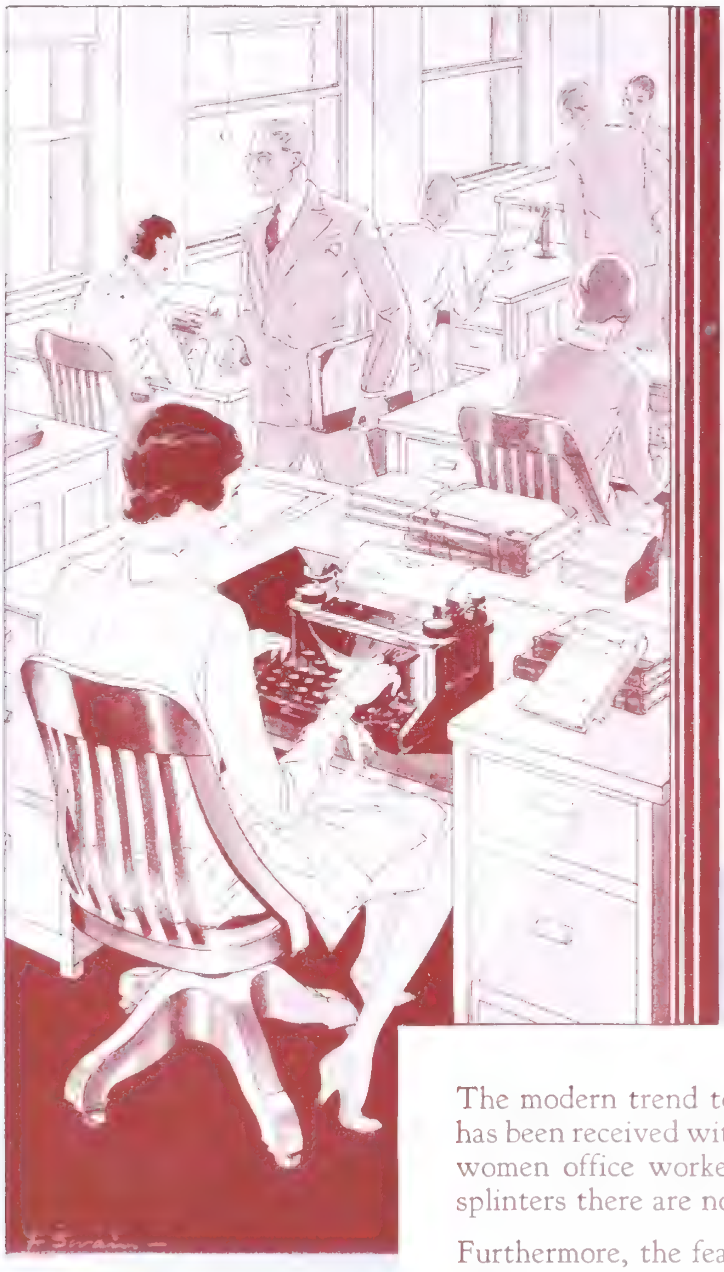
FIRE—For hours they baked and roasted it in a roaring fire. It still ran on!



FLOOD—In the icy waters of the Erie Canal they drowned it. It still ran on!

BLIZZARD—They buried it in a giant tower of ice. It still ran on!

SAND—They smothered it in an avalanche of sand. It still ran on!



SPLINTERS vs. SILK STOCKINGS

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ALCOA

CHAIRS OF ALCOA ALUMINUM

Nitrogen: IV—*The Cosach*

The logic of ton costs

THE cartel, with its production quotas and its price-fixing, is as makeshift and s temporary as cartels must be. But the *osach* is a monument built for Chilean and uggenheim posterity. It embraces the entire atural nitrate industry, enlists the Chilean overnment itself as an active partner, and ounts as an asset the resources of the uggenheims—than which there scarcely xists a higher hill of wealth, prestige, and ndustrial experience. Rationalization, as ranslated into terms of technical progress, is arried in the *Cosach* enterprise, for good or ll, to its ultimate conclusion. Short of such desperate last measure as the conversion f the *Cosach* debts into common stock—irtual repudiation—it is apparent that the rganization of the Chilean nitrate industry an go no further. If the *Cosach* fails, the industry is irretrievably lost. The very scope of he plan would be the measure of its disaster.

The cornerstone of the *Cosach*, and hence he point where analysis of the plan must tart, is the Guggenheim Process. As Cappelen mith worked with Chuquicamata until opper costs *at the mine* tumbled from $300 o $100 a ton, so, for the same vigorous nasters, he slashed at the $12 per ton plant ost of the old Shanks Process. He was working on far more dangerous ground, as the Guggenheims undoubtedly realized, for it s one thing to pay $30,000,000 for a new plant which will save at the rate of $200 a on and another thing to stack that investment against a per ton saving of at most $10. Nonetheless, the dynamic Norseman was convinced that he could make his splendid tructure pay; the four brothers at 120 Broadway believed him; and Maria Elena began to sprawl across the pampas.

After three years of experiment, the exact avings of the Guggenheim Process are till a little difficult to determine, but it is air to say that they are not less than $6.00 ton, and may be as much as $9.00. If $9.00 is the correct figure, it is possible to draw up this comparative cost schedule for itrate of soda, delivered at New York:

SHANKS PROCESS
(*per short ton costs*)

At plant	$12
Bags, freight, lighterage to port, etc.	6
Ocean freight	5
	$23

GUGGENHEIM PROCESS
(*per short ton costs*)

At plant	$ 4
Bags, freight, lighterage to port, etc.	5
Ocean freight	5
	$14

Thus Cappelen Smith had very tangible results to show his associates. No less tangible were his bills. Before he was through with Maria Elena, the Anglo-Chilean Consolidated Nitrate Corporation had piled up a $55,000,000 debt. While various factors make it difficult to estimate the net annual charges, including amortization, on that part of the investment applying to Maria Elena, they have offset already a considerable part of the saving the process could effect. That the Guggenheims have suffered many disappointments in the development of Maria Elena is indicated by a comparison of the income projected in the prospectus issued in connection with Anglo-Chilean Consolidated Nitrate Corporation financing of October, [illegible], and the results obtained by that company to date.

Yet the Guggenheim investment in Maria Elena, larger by some $20,000,000 than originally projected, is small compared with the investment to be made by the world in the *Cosach* enterprise. The capital setup of

Cosach

Assumed annual production [illegible]				[illegible]
Assumed direct cost per short ton [illegible] at consumers' port				[illegible]
Assumed [illegible] cost per ton				[illegible]
Total assumed cost				[illegible]

Capitalization		Charges	Add to [illegible]	[illegible]
[illegible]				
I. $100,000,000 new money providing for completion of plan and possible interim payments to Chilean Government in lieu of Export Tax, ranking equally with		[illegible]	[illegible]	$19.85
II. $110,000,000 assumed obligations of absorbed companies as follows		11,000,000	[illegible]	[illegible]
Anglo-Chilean Consolidated Nitrate Corp.	$54,000,000			
Lautaro Nitrate Co., Ltd.	43,000,000			
Other companies	[illegible]			
Followed by				
Preferred stock				
III. $60,000,000 7 per cent preferred stock given out to junior security holders of absorbed companies who prefer it to common		4,200,000	1.61	25.69
Total charges ahead of common		$25,200,000	$9.69	$25.69
Common stock				
IV. $300,000,000 common. Of this $180,000,000 Class A to the Chilean Government as compensation for ending the export tax and turning over 150,000,000 tons of government owned nitrate deposits. The balance, $120,000,000 (with the $60,000,000 preferred stock mentioned above) to junior security holders of absorbed companies, of which a considerable amount will doubtless go to the Guggenheims in return for Lautaro and Anglo-Chilean Nitrate stock		$30,000,000*	$11.54	$37.23

*This figure assumes a return of 10 per cent on the common which would give to the Chilean Government about $18,000,000 as against the $30,000,000 it has been collecting through the export tax.

The above figures represent a presentation of the best data available for publication on the *Cosach*. Reference should be made to the Project of Law, to the record of the Anglo-Chilean Consolidated Nitrate Corp. and to a statement by Aikman, Ltd., largest nitrate factors, wherein it is stated that only during the past few months have Guggenheim cost reductions attained expectations. Reference must also be made to the qualifying statements in the accompanying article. No official cost data is available and finance plans are not completed.

The table suggests, however, that if *Cosach* can get $37.23 for a ton of its nitrates, it will make 10 per cent on its common stock in addition to all costs, interest, and amortization. Going backwards, if it gets only $25.69 per ton, then it will make enough to pay costs, interest, and amortization but will earn nothing on the common. At $50 a ton it would, of course, make fabulous millions. This table indicates the nature of the problem, but it is based on figures which leave plenty of room for technical debate, particularly in the matter of actual to-be-realized per ton costs and in the nature and extent of the fixed charges. FORTUNE presents it as a pattern, not as a statement of economic dogma.

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Nitrogen IV—*The Cosach*

[*Continued from page 105*]

the *Cosach* has not been made public, but it is probable that investors, principally in America, may be asked to rejuvenate the centenarian industry with as much as $100,000,000 of new money. If rationalization of the industry is completed, at least two new Maria Elenas will be built. And *Cosach* must also finance, over three years, a $60,000,000 payment to the Chilean Government in lieu of the export tax. While only the future can finally justify this investment, it is now possible to analyze certain of the conditions surrounding the Chilean-Guggenheim decision to ask for it. Of these conditions, the most urgent and alarming is the world competition.

Competition

The questions of ton costs, of the price reductions which *Cosach* can profitably make, are the crux of the competitive situation. Nitrate (natural) and nitrogenous (synthetic) fertilizers are practically alike, and American farmers will not long buy Chile nitrate of soda at $38 a ton when and if they can buy the synthetic product at $30. Only within the last few years has the spectre of price competition from American producers loomed before the startled Chileans. In 1927, the U. S. produced synthetic sodium nitrate in laboratory quantities only. But in 1930, the Allied Chemical & Dye units at Hopewell are in partial production and by 1932, with the plant in full operation, Hopewell might fill half the entire (1,200,000-ton) U. S. demand. If the whole Hopewell production should compete directly (and successfully) with the natural nitrates, Chile's loss would amount to about one-third of its market. The seriousness of the threat could not be overlooked, and however violent the Chilean reorganization may seem, it comes none too soon.

Just what the *Cosach* will be able to do in the U. S. price situation is the immediate question. It cannot protect its position with the price-agreements of Europe because: (1) the anti-trust laws will not permit it; and (2) Allied is notably hostile to anything which savors of cartelization or price-fixing. As Allied is also notably committed to low cost theories, the Chileans cannot comfortably look forward to

[*Continued on page 108*]

Ewing Galloway

THE CONTRIBUTION OF THE BIRDS

Famous among all islands of the world are these, the Guano Islands of Peru. Here no man heaps contumely upon the birds that fly overhead. Were it not for them and for their quaint, unlovely habit, an important Peruvian industry would not exist. Yearly from these islands 125,000 tons of guano (bird lime) are exported, 100,000 tons to Peru, 25,000 tons to foreign ports, including the U. S. Most of the guano are shipped and sold by W. R. Grace&Co. (Grace Line, Panagra, etc., etc.). Peruvian farmers use the guano as it comes to them. So also do some U. S. farmers. About one-half of the U. S. import, however, is combined with other materials in more complex fertilizing formulas.

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Nitrogen IV—*The Cosach*

[*Continued from page 106*]

unchanged schedules. Allied has of course never made public its plans and hopes for 1932, but it would be surprising if, in that year, the American farmer will have to pay the current $38 price—or anything like it—for a ton of synthetic sodium nitrate.

It was to fix the world price, of course, that the many producers journeyed to Ostend and Paris and Berlin. If they had been able to fit *every* piece into the nitrate puzzle, they could certainly have controlled the price for as long as they could control themselves. But they did not have every piece. Allied, a very big piece, and Japan, a growing piece, were not on the table. While the current decline in steel production will make an important cut in the supply of by-product ammonia, this is more than offset by the new, uncontrolled synthetic production coming from America and Japan. Here is the threat to the cartel from without. And while the Europeans will accept rigid quotas as an emergency measure, it is doubtful how long they will be willing to stand the terrific costs of half-idle plants. This is the threat from within.

Through the cartel, however, both Chile and the European producers are given a fairly comfortable period of reflection. The I. G., which towers above the rest, is yet not strong enough or courageous enough to play its hand alone. Like almost every other European company (Courtauld's is a shining exception) it prefers to trust its profits to diplomacy. The advantages of this course are perhaps more apparent than real: its dangers are well known to practically all of the 1,200 cartels which have thrown their network over German industry.

Salvage

Thus the competitive situation. Unquestionably it could not have been met by the old industry. Even at $40 a ton, most nitrate companies lost money producing under the Shanks Process after the export tax, and price reduction was out of the question. Chile was on the verge of losing an industry, and one of the only two industries it possesses. Whether or no the *Cosach* is wise, there can be no argument over the fact that it was necessary. That the government clearly realized the gravity of the situation is evidenced by the heroic step it took in the direction of salvage. By abolishing the export tax, it clipped $12 at one stroke from the producers' costs. (The government, by sharing in *Cosach* profits, undoubtedly expects to recoup this loss.) To this could be added the possible $9.00 saving in process. When ton costs had been halved, there was room for experiment. The industry was at least alive. In a sense, therefore, it becomes of purely academic interest to debate whether or not the *Cosach* plan should be put into effect. The fact is that it *must* be put into effect if the new industry is to survive at all.

The $100,000,000 will complete the process whereby ton costs, before interest, will be reduced from $35.50 to $14. Interest and amortization on the new money, added back to costs on a production of 2,600,000 tons, brings the new cost to $18, a net gain of $17.50. And each dollar over $18 which the new industry can get translates itself into $2,600,000 of income it would not otherwise possess. This is the real argument for rationalization, and obviously justifies the *Cosach* to Chile and the producers.

Profits

This is not to say that the *Cosach, as a corporation,* will necessarily show profits, or even meet all its charges. With the price of sodium nitrate at $30, there remains a new $12 per ton income. Subtract $2.00 for selling costs, and the annual benefit totals some $26,000,000. This has some way to go before every element in the *Cosach* is happy. On page 105 is printed a box which suggests the amount of satisfaction the various *Cosach* factors may expect.

Certainly this experiment faces tremendous difficulties. The nitrate industry is in a period when neither production nor price can show the stability which alone effects real rationalization. Yet the effort of the *Cosach* must remain one of the most challenging ever attempted by a major industry.

THE RAILROAD PRESIDENT MAKES FRIENDS WITH HIS PUBLIC

• THE HEADS of transportation companies, like certain kings and caliphs of history, might do well to travel in their own smoking-cars, trolleys or busses, *incognito.* They would be quite likely to hear their companies abused, callous remarks passed about their policies, and jests made at the expense of their rolling stock. For there is perhaps no business more subject to misunderstanding on the part of its clientele than that of the public carrier. • In a five-minute conversation with any one of its passengers, the railroad President could make a staunch friend for the company. But how is he to secure such individual contact with the hundreds of thousands of users of his lines? • He can *write* to them. He can take each commuter, each shipper of freight, each stockholder, into his confidence, and tell him, straight from the shoulder, about the aims and achievements of the road. Such a message, typewritten on the letterhead of the President's Office, and signed with the President's name, will be read and remembered with respect. • In transportation, as in so many other fields, Coupon Bond is the paper chosen by business leaders for their executive correspondence. Coupon Bond is made 100% of new white rags—a supreme achievement in paper making. Its strength and dignity are expressive of the highest traditions of business. And its watermark is known from coast to coast. • Our portfolio, "The Modern Trend in Letterheads," and a new booklet, "The Executive Letter," will be sent you on request. (In writing for them please use your business stationery.) ℭ *Coupon Bond is but one paper in the Eagle-A Line of Bonds, Ledgers, Writings, Index Bristols, Offsets, Covers, Book Papers, Mimeograph and Manifold Papers—the* right *paper for every business purpose.*

AMERICAN WRITING PAPER COMPANY, INCORPORATED

HOLYOKE, MASSACHUSETTS

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this wonderful
tonic bath
for the skin

after shaving
after bathing
after exercise

Splash a few sparkling drops on your face . . . and watch fatigue-lines vanish, feel new life come tingling back . . . Give your whole body a 30-second rubdown . . . and note how cramped muscles relax, how all your skin is smooth as cool silk . . . Shaving lotion, body freshener, toilet water — all in one: Pinaud's Lilac . . . The delicately pungent freshness of French lilacs — the tonic stimulus of essences imported from Pinaud's own Paris laboratories — this famous formula is one of the most luxurious toilet essentials in the world. Enjoy it today! Pinaud, Paris — New York.

The World's Biggest Drug Chain

[*Continued from page 44*]

been, the project would have failed miserably if Drug, Inc. could not have summoned the man-power to effect its plans. In every argument pro or con the chains, the question of management plays a vociferous part. Therefore let us arrest the management of this world's largest drug business in the full swing of a busy morning and make each of Drug, Inc.'s major executives show us exactly what he is doing. As questions of rank are never posed in the Drug, Inc. offices (there having been no need to pose them), we may begin quite at random in the offices of Mr. George M. Gales, the unquestioned Drug, Inc. expert on retailing. On this particular morning, Mr. Gales is noting that August sales of the Boots stores are up from August of last year, and while Mr. Gales is agreeably impressed by the sheets before him, he is scarcely surprised. In fact, it is very difficult to surprise Mr. Gales, and when he *is* surprised there is apt to be trouble. For this spruce, cultivated, Southerner-turned-Long-Islander makes it his business to know just what profits each store should show and then makes it the store's business to show them. He has a notable record with United Drug; the job which pleased him most was going to England in 1920 and putting Boots on its feet.

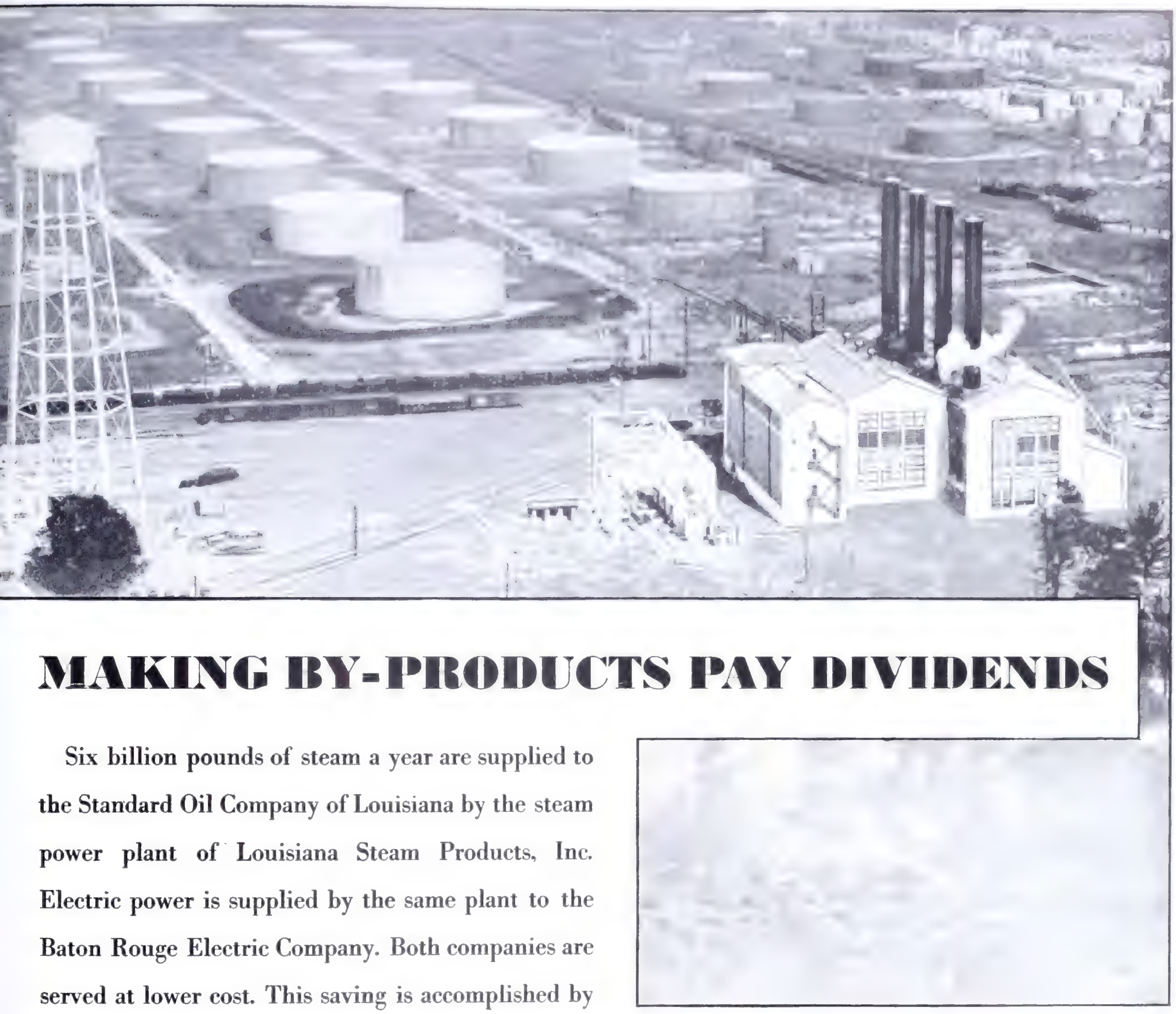
Mr. A. H. Diebold and Mr. W. E. Weiss should be summoned together, although on this particular morning Mr. Diebold is in New York's Liggett Building and Mr. Weiss is at the great Sterling factory in Wheeling, West Virginia. Messrs. Diebold and Weiss comprise the Sterling team. Out of Canton, Ohio, some twenty-five years ago, came a tall, mild man and a short, aggressive man. The tall, mild man had the ideas; the short, aggressive man put them into practice. They are today the dominant figures in Sterling, and their methods are the same. It was Mr. Diebold who conceived the tremendous Sterling expansion of the last two years; Mr. Weiss made it possible and profitable.

After these, we might interrupt Mr. Charles McCallum, to discover him thumbing through a sheaf of newspaper clippings. Each day, from every town where there is a Liggett store, come the advertised price-cuts of Walgreen or Katz—competitors. "Cigarettes—94 cents a carton" "Aspirin—35 cents for 3 tins" "Ipana Toothpaste—37 cents" The lists are long, and the day's sheaf is high. Mr. McCallum will tell you that the independents are often worse than the chains. "You cannot sell below cost price and remain in business," he observes. "Our price policy is simple: the lowest possible price to the consumer consistent with good business." Sometimes Liggett will meet a competitor's campaign; more often, not. But prices are daily problems for other reasons. There are the Liggett stores' birthday sales, when you can get a fifteen-cent soda for a nickel. And a store in the South may be overstocked with candy as a hot spell approaches. United Drug studies the weather, as it studies the flu and other odd subjects. But in general its price policy is both stable and constant.

Even simpler is Drug, Inc.'s price program in England, where operate the Boots stores (founded by Jesse Boot, now Lord Trent. He chose his title from the river

A. H. DIEBOLD

Underwood & Underwood
W. E. WEISS



MAKING BY-PRODUCTS PAY DIVIDENDS

Six billion pounds of steam a year are supplied to the Standard Oil Company of Louisiana by the steam power plant of Louisiana Steam Products, Inc. Electric power is supplied by the same plant to the Baton Rouge Electric Company. Both companies are served at lower cost. This saving is accomplished by burning all available residuals of the Standard Oil Company's refinery.

The plant, designed and built by Stone & Webster Engineering Corporation, was operating in 5 months and 12 days from the time ground was broken.

BUILDERS and ENGINEERS
For the
BUSINESS LEADERS
OF AMERICA

STONE & WEBSTER ENGINEERING CORPORATION

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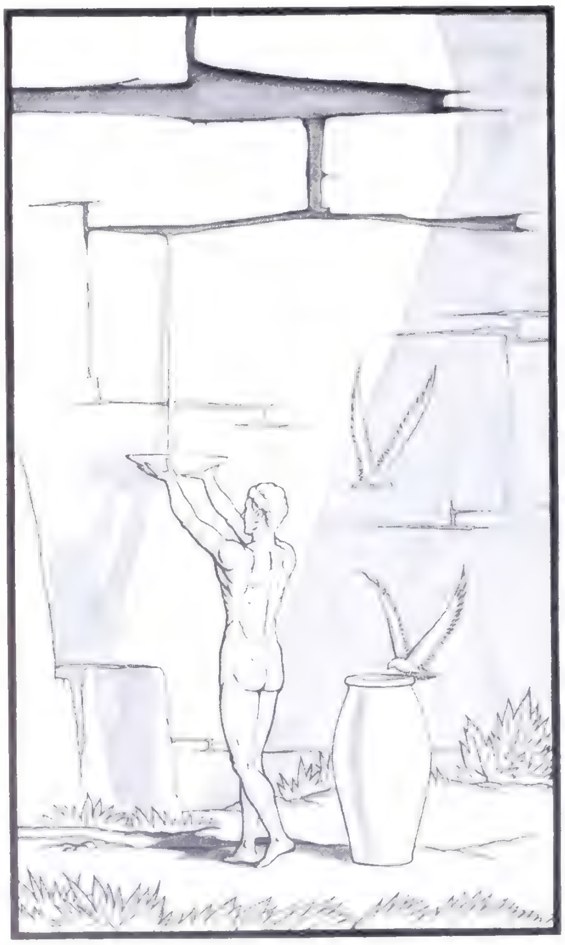
Waste products . . a penalty in business today . . now go under the eye of the research laboratory and emerge in new form, useful, economical, and rich in sales opportunity. The Rand Laboratories, Incorporated, is a group associated for service to industry, in the field of chemical, electrical and mechanical research.



RAND LABORATORIES, INC.
A unit of THE RAND COMPANIES
RAND TOWER, MINNEAPOLIS

which runs past his estate). There a merchants' protective trade association, government organized and supervized, places a stamp (like the U. S. Internal Revenue sticker on packages of cigarettes) on all drug goods. The stamp proclaims a price, and all druggists are forbidden by law to undersell it.

Likewise in the Liggett Building in New York is W. C. Walt, treasurer and financial brain of Drug, Inc.—and, irrelevantly, perhaps the best golfer in the company. And, of course, there is Mr. Liggett in Boston. He is somewhat less active now than when Leon Street was young, but his command of figures and his extraordinary memory are still Drug, Inc. assets. He is a large, ruddy person, cheerful and convivial. As Republican National Committeeman of Massachusetts, he was stormy and vigorous and caused much comment among dry Republicans by a devout espousal of the anti-prohibition cause. He has a home in Newton, Massachusetts. He yachts on his *Ambler* and keeps hunters. But he likes his business and he likes his office, which is filled with photographs of friends and family and many an old copy of his firm's house magazine, *Rexall Advantages*. On the wall behind his chair hangs a painting of the original Leon Street building. On the dictaphone on his desk is a little brass pig.

His first business experience, at the age of fourteen, was selling for Wanamaker's. His first (and unsuccessful) venture into the drug business was selling a headache tablet. He has a flair for organization and is able to inspire both confidence and enthusiasm in his associates. In 1921 the stock of Drug, Inc. was badly depressed, and Mr. Liggett found himself unable to liquidate his holdings in order to meet certain obligations. Rexall agents loaned a total of $1,250,000 and enabled Mr. Liggett to get out of his difficulties. He is undoubtedly as well informed about the drug business as any man in the U. S.

Drug Inc.: *Sterling Products*

[*Continued from page 45*]

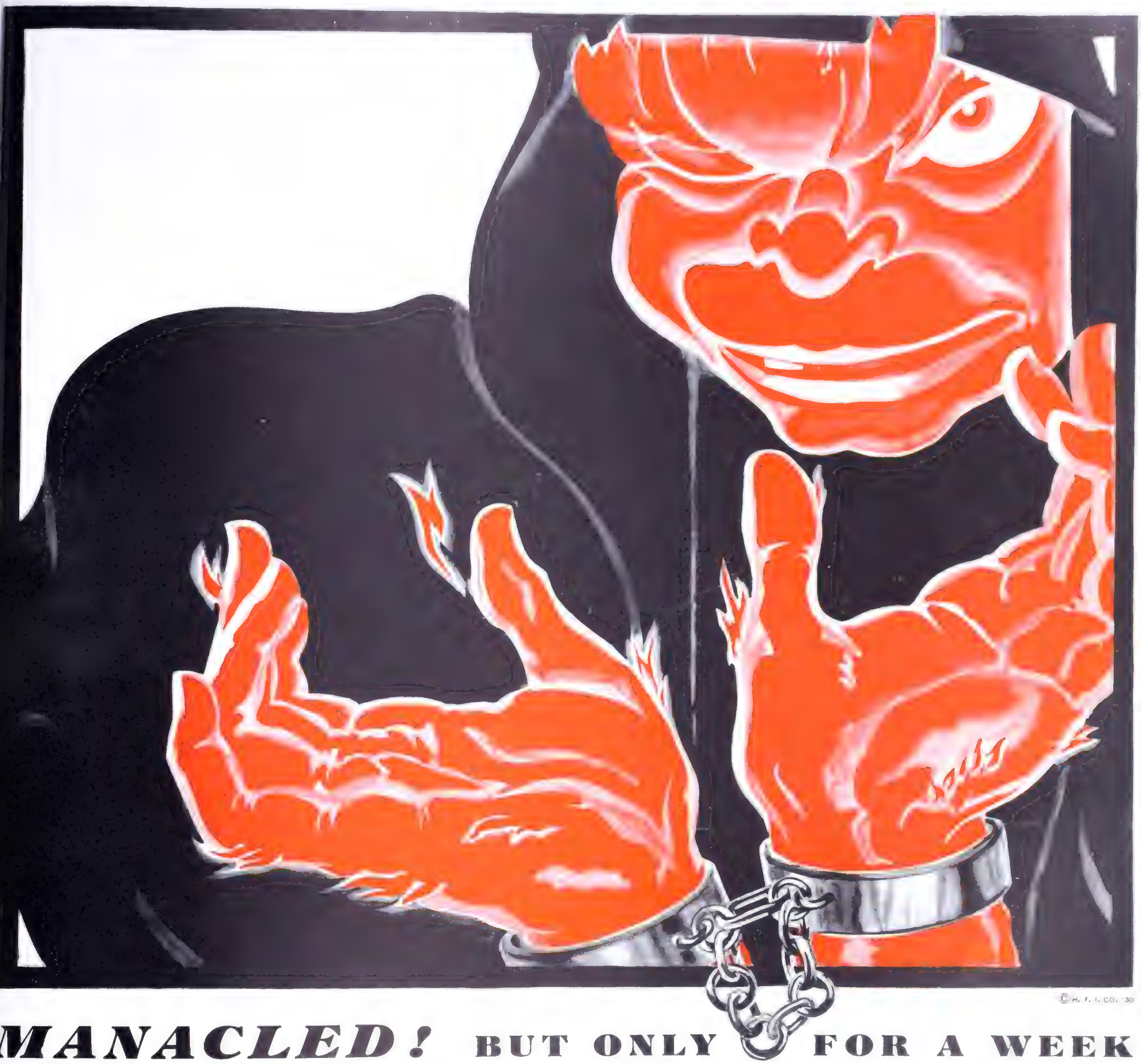
produced and Winthrop-marketed, is the famous 606, better known as salvarsan, which makes war on the trypanosomes responsible for African sleeping sickness and annihilates syphilis germs. It was discovered by Paul Ehrlich, than whom no more picturesque figure ever appeared among research workers. He was born in 1854 in Silesia. At school in Breslau he was brilliant but intellectually unruly. Asked to write an essay on the subject, "Life is a Dream," he composed these sentences: "Life rests on normal oxidations. Dreams are an activity of the brain and activities of the brain are only oxidations."

His god was Robert Koch, and it was Ehrlich who showed Koch how to stain tissue and see the tubercle microbe. Dabbling with the germ, he caught tuberculosis and went to Egypt, returning in 1890 cured by Robert Koch.

He was constantly experimenting with dyes. One day as he watched methylene blue course through the tissues of a rabbit, he noticed that dye stained only the nerve endings. He decided to discover an aniline dye which would select a microbe for annihilation, avoiding the tissue and leaving it unimpaired. For several years he experimented with trypanosomes. Then he read of a poisonous drug called atoxyl, of which arsenic was the strategic substance, which had proved efficacious in a few cases of sleeping sickness. Ehrlich blithely said, "We will change it a little." Every scientist assured him that atoxyl could not be changed, but Ehrlich continued his work. The rest of the story is well known. After 605 failures, Ehrlich's 606th experiment produced salvarsan, which killed trypanosomes and left no trace or after effects. It was the result of twenty years of "mad unscientific work." It was the most important chemico-medical discovery of a century.

GEORGE M. GALES

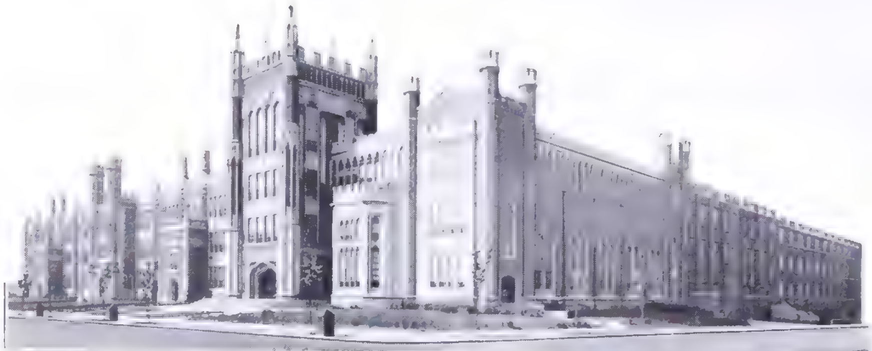
FIRE PREVENTION WEEK



MANACLED! BUT ONLY FOR A WEEK

Everybody is on guard during Fire Prevention Week, but the Fire Fiend slyly winks nd says to himself: "Watch me get busy during the rest of the year." : : He may ave his eye on *your property*. It is up to you to guard against him all year round.

THE HARTFORD FIRE INSURANCE CO.
AND THE HARTFORD ACCIDENT AND INDEMNITY COMPANY
WRITE PRACTICALLY EVERY FORM OF INSURANCE EXCEPT LIFE

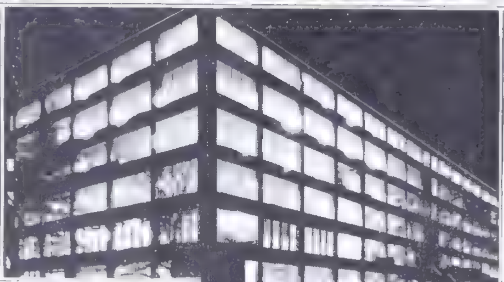


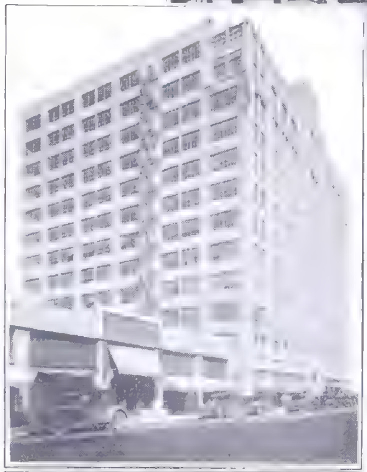
Bayonne Junior Vocational High School, Bayonne, N. J. Donald G. Anderson, Architect, Bayonne, N. J. Egan & Montague, Contractors, New York City.

St. Louis Water Works, St. Louis, Mo. Study & Farr, Architects, St. Louis, Mo. Dunham Construction Co., Contractors, St. Louis.

A. & P. Quaker Maid Plant, Terre Haute, W. B. Van Inwegan, Architect, New York. Glenn W. North Const. Co., Terre Haute, Ind.

Merchants' Exchange Building, Los Angeles W. Douglas Lee, Arch. & Contr., Los Angeles.





Bayley Steel Products include the following

- Pivoted Windows
- Pivoted Windows Screened
- Projected Windows Commercial
- Projected Windows Architectural
- Casement Windows
- Continuous Windows
- Detention Windows
- Prison Windows
- Airport Doors
- Tubular Doors

Shanghai Leather Co., Ltd., Shanghai, China.
R. A. Curry, Architect, Shanghai.
Anderson Meyer & Co., Contractors, Shanghai.

. . . Half Way Around the World
NEW YORK to SHANGHAI

IT is indeed significant that the acceptance of Bayley Steel Windows is not confined to any one section or any one country but reaches far beyond the cities and the borders of the U. S. A. even way over into the Orient.

Wherever the problem of natural daylighting and ventilation has demanded the most practical and economical solution, there you will find Bayley Steel Windows have been selected and are known for their strength, performance and good appearance . . . for their advanced design and construction . . . for their long and satisfactory service.

This wide acceptance is due to the fact that Bayley has pioneered in every important improvement in steel windows since the birth of the industry, having looked far in advance and anticipated the needs for better metal windows of various types and for various uses in all kinds of buildings.

Bayley Pivoted Windows Screened . . . Bayley Prison Windows . . . Bayley Casement Windows . . . as well as all other Bayley Windows . . . have incorporated exclusive features to meet new requirements and to assure better service.

Call the nearest Bayley man when preparing plans and writing specifications. He will bring to you engineering service based on more than forty-nine years of experience. The William Bayley Co., 148 North St., Springfield, Ohio.

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BAYLEY
STEEL WINDOWS & DOORS

AS WARM IN YOUR CAR AS IN YOUR LIVING ROOM

HaDees

HOT WATER CAR HEATER

PATENT Nos. RE17131 and 1746985

BLOWS HOT WHEN IT'S COLD BLOWS COOL WHEN IT'S HOT

Electric control from the dash

Three logical steps mark the development of the motor car toward complete driving comfort. First: there was the open car: then came the closed car: now HaDees scientific hot water heaters provide the ultimate requirements of comfort all the year 'round.

Driving in bitter cold weather or just mildly chilly weather: HaDees Hot Water heat, with forced radiation gives you all the pure-air heat you want, when and how you want it, regulated from the dash by a touch of the finger.

Driving in hot weather: HaDees gives you fan-cool ventilation by cutting off the source of heat.

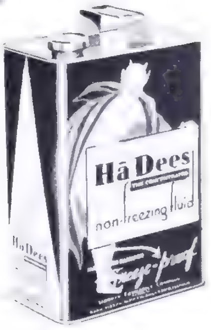
Simple and substantial in construction . . . perfect in operation . . . a handsome, chromium finished unit that adds permanent smartness to your car interior.

The price you pay is insignificant compared with the important and lasting benefits enjoyed, because a HaDees heater can be easily transferred from old to new car thereby giving years of service.

Front dash models for Sedans and Coupes—a special model for Ford cars—also a DeLuxe Rear Seat Heater. Ask your dealer for all the facts.

Every HaDees Heater guaranteed by the world's largest bonding house, the National Surety Company. Their Gold Bond Guarantee of quality adds no extra cost to you.

LIBERTY FOUNDRIES COMPANY, Rockford, Ill.
(A Division of Burd Piston Ring Co.)



HaDees non-freezing fluid, the never-failing, economical, all-winter radiator fluid. Ask your dealer.

This shows the deflector, adjustable to any position, which gives control of heat volume and direction.

Quick Heat . . . Pure Air . . . On or off with touch of button

HaDees HOT WATER **CAR HEATER**

PATENT Nos. RE17131 and 1746985

MELLOWED A HUNDRED MILLION YEARS

Long, long ago in PENNSYLVANIA

MILLIONS of years ago in the Devonian Age—while the world rocked with earthquakes and mighty, armored fish swam the seas—Nature stowed away in the Bradford-Allegany District of the Pennsylvania field her most valuable crude oil.

Most crudes refined for motor oils today are millions of years younger than Bradford-Allegany crude. A few are older. *But among them all this Bradford-Allegany crude was formed at a time when earth conditions were 100% favorable—so favorable that a hundred million years of filtering and mellowing have brought this crude to the highest known point of lubricating quality!*

That is why Sinclair has built at Wellsville, N. Y., the largest single refinery devoted exclusively to the manufacture of Pennsylvania grade motor oil. Here, under the careful supervision of laboratory experts, Sinclair refines Bradford-Allegany crude into Sinclair Mobiline.

Ask for Sinclair Mobiline today—use the grade recommended by Sinclair dealers according to the Sinclair Law of Lubrication. At draining time notice how the used Mobiline comes out of your crankcase still rich and oily—positive, visible proof of protection for the last mile as well as the first!

Send us your name and address and a list of states where you intend touring and we will send you road maps and the Sinclair Law of Lubrication booklet, free. SINCLAIR REFINING CO., Inc., 45 Nassau St., New York, N. Y.

SINCLAIR MOBILINE

Reg. U. S. Pat. Off. 1905

Pennsylvania MOTOR OIL

Made in the newest, largest single refinery using PENNSYLVANIA grade crude exclusively.

guaranteed by
SINCLAIR REFINING CO. INC.
to be 100% pure
PENNSYLVANIA GRADE OIL

35¢ *per quart*

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Adamses Alive

[Continued from page [illegible]]

Out of his reveries and researches came *Mont Saint Michel and Chartres*, *The Education of Henry Adams*, and innumerable historical works. In Washington he and his wife (Marion Hooper of Boston), the John Hays, Clarence King, and a few others formed a circle which was unquestionably the social apex and one of the intellectual centers of American life. It is impossible to conceive of Henry Adams making money, although his marriage brought him emoluments of this sort. It is still more impossible to imagine the diffident Brooks entering the financial lists. A pensive eccentric, he married a sister of the late Mrs. Henry Cabot Lodge and taught a while at Boston University Law School. But mostly he evolved theories to account for what he considered the decay of civilization, and wrote fastidious and woebegone treatises such as *The Degradation of the Democratic Dogma*. Presumably he lived on his inheritance; economically, at least, he never seemed to be other than comfortable. Henry Adams in his *Education* admirably suggests the sensitive state of mind in which he and Brooks presumably found themselves, one which would have surely kept them away from the commercial excitement of the times. Said he: "The habit of doubt; of distrusting his own judgment and of totally rejecting the judgment of the world; the tendency to regard every question as open; the hesitation to act except as a choice of evils; the shirking of responsibility; the love of line, form, quality; the horror of ennui; the passion for companionship and the antipathy to society—all these are well known qualities of New England character."

But the most significant example of the Adamsian reaction to the changing world is found in the history of the Minister's second son, Charles Francis Adams II. Here was an Adams who braved the thunders and stresses of the materialistic sphere. Characteristically, however, he began as a theorist. An aimless lawyer with courageous service in the Civil War just behind him, he inspected the American scene in order to discover a field with a future. He fixed on railroads. Quite ignorant of them, as logically unjustified as a housewife who should try to write an essay on chain stores, he conceived an article on railroading for the *North American Review*. But Adams's intuitions were cogent; he learned and wrote more and more, finally became a member of the Massachusetts State Railroad Commission (his wise suggestions solved the Boston & Maine strike of 1877), and impaled the nefarious Gould with a journalistic barb on the Erie scandals. During these years he was also president of the Kansas City Stock Yards Company, a post which he held for forty years, building it up from a small concern earning some $20,000 annually to the largest organization of its kind in the world, capitalized at $10,000,000 and earning $1,200,000 per year.

This does not sound like an Adams. But wait. The man's prestige as a railroader practically forced him into the presidency of the teetering Union Pacific (1884). He saved the road from bankruptcy. Again, this is scarcely Adamsian. After five years in the chair, however, he began to feel that his influence was no longer beneficent; things were not going well. Of this unhappy period he was to write in his *Autobiography*, with truly Adamsian candor and self-scrutiny: "I was . . . wholly demoralized. I hated my position and its duties, and yearned to be free of it and of them. My office had become a prison-house. Loathing it, I was anxious, involved, hopeless. I had accordingly become a plunger; rapidly getting beyond my depth . . . I displayed indecision and weakness . . . I simply rode for a fall; nor did I really care when or how I got it." This is not the utterance of a man bent on personal combat and achievement in the field of industry; it suggests, rather, the cries of distress which his grandfather, John Quincy Adams, made when badgered by fellow members of the House of Representatives—the cries of a thwarted public servant. There is no evidence of financial ambition egging him on; he seems to feel that he is no longer of use to the railroad and he is miserable. The happy relief came when the

Leadership

Leadership is the guiding power of business at work. It represents the confidence and faith of the many in the few. It is responsible for the profits of business—for the livelihood of workers. It is the trusteeship of success.

Especially do conditions today demand real leadership—knowledge, vision, fighting determination and courage. Dependable information must be more constructively used. Inefficiencies must be eliminated, more competent organization built up, new ideas and better methods adopted — to prevent loss and insure profits and good-will.

Leadership is blind without knowledge. Knowledge of one's business comes from the analysis of facts incident to sound planning, and from the frequent comparison of operating results with a well-made budget. Such analyses and comparisons point out weakness and waste, suggest better methods, indicate new sources of profit. They are chart and compass to renewed progress and greater success.

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WACO
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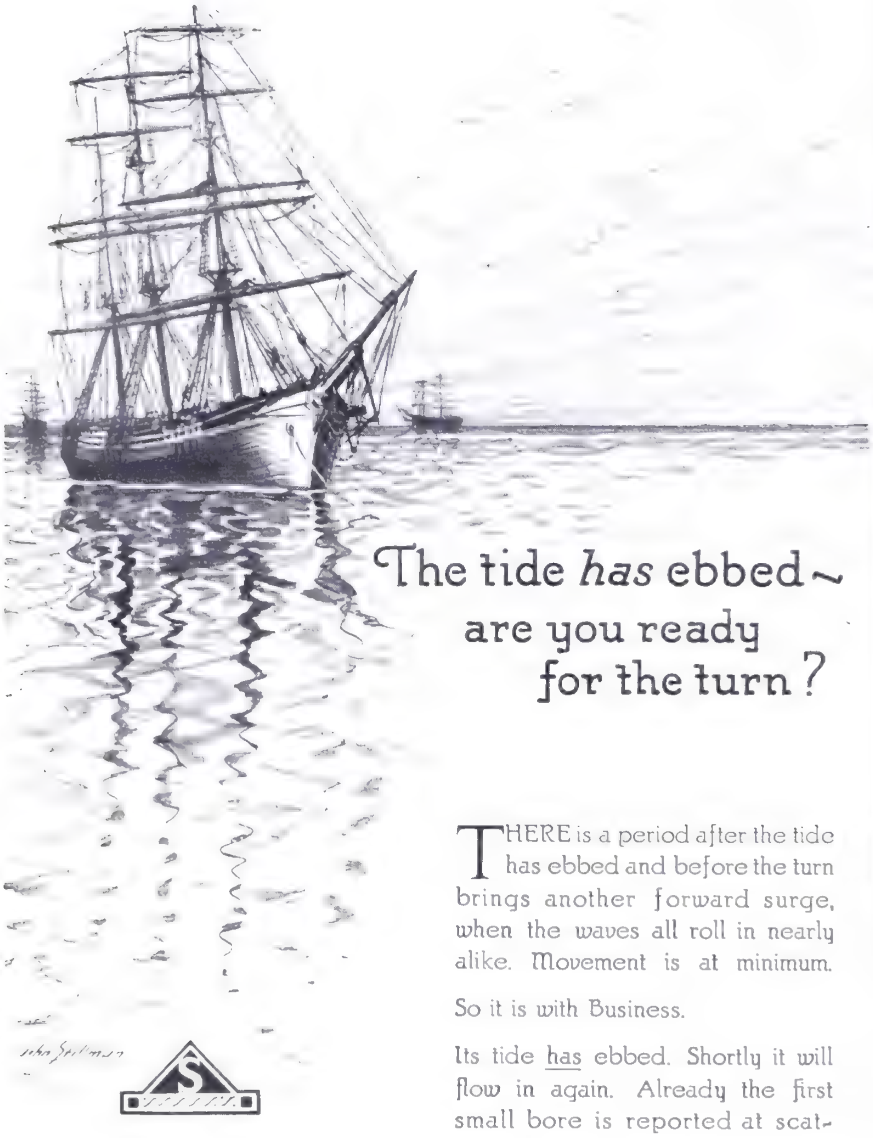

The tide *has* ebbed~
are you ready
for the turn?

THERE is a period after the tide has ebbed and before the turn brings another forward surge, when the waves all roll in nearly alike. Movement is at minimum.

So it is with Business.

Its tide has ebbed. Shortly it will flow in again. Already the first small bore is reported at scattered points.

Now, before business gathers momentum towards its flood, is the time to prepare to sail in with the tide.

Call in the Engineer now to sound your productive channels and remove the bars that there may be no waiting when demand will again be normal. Plant and machinery studies and reorganizations should not be delayed. Plans should be made for possible needed additions.

The tide has ebbed.

J. E. SIRRINE & COMPANY
Engineers
Greenville South Carolina

Textile Mills
Warehouses
Surveys
Examinations
Appraisals

Rayon Plants
Tobacco Factories
Steam Plants
Water Supplies
Reorganizations

General Industrial Plants
Production Studies
Hydro-Electric Systems
Power Application & Lighting
Sanitary Engineering

revengeful Gould ousted him after a six year tenure of office. If one needs further indication that the Union Pacific was far from owning this man, there is the fact that during his presidential years he constantly issued historical papers and in the last year published his two volume biography of Richard Henry Dana. On the strength of these writings he was elected to the presidency of the American Historical Association, an honor which either of his historian brothers would have been delighted to receive.

Charles Francis Adams II acquitted himself most creditably in what, to his family, was thus far a foreign field. He made a great deal of money, which fact is not impaired by the fact that he lost most of it in the panic of 1893. In other words, he demonstrated that an Adams might assume with credit the industrial stage. But he seems far happier in his more detached rôles, as his parting salute to the money marts would indicate: "I have known, and known tolerably well, a good many 'successful' men—'big' financially—men famous during the last half century: and a less interesting crowd I do not care to encounter. Not one that I have ever known would I care to meet again, either in this world or the next: nor is one of them associated in my mind with the idea of humor, thought, or refinement. A set of mere money-getters and traders, they were essentially unattractive and uninteresting. The fact is that money-getting, like everything else, calls for a special aptitude and great concentration; and for it, I did not have the first in any marked degree, while to it I never gave the last."

. . .

Thus the Adams family through the fourth generation. The solemn honest faith in God of the Adams statesmen evolves into the doubts and questionings of the Adams scholars. But throughout the Adamses have been men who have taken life seriously and tried to arrive at its ultimate rather than convenient significances. It is too early to make any such generalizations about the fifth and subsequent generations. Their most noteworthy members are spread on these pages. Whether or not they have made a more successful adjustment than their ancestors to the tempo and spirit of the times, the reader must judge for himself. He must also judge whether he would have them do so.

Atom S

[*Continued from page 83*]

the surface by air pressure, collected in barrels, cooled. But Frasch's friends argued that it would be impossible to pump superheated water from a boiler to a well and then plunge it 700 feet into the cold earth at a superheated temperature.

Frasch admitted that the first few hundred gallons of water would be cooled off, but when Frasch spoke of water he was speaking in terms of lakes, not pipes: he intended to heat the very bowels of the earth. Into the Calcasieu Parish deposit he sank three concentric pipes: the outer pipe, six inches in diameter, was for water; the middle one for melted sulphur; the inner one, only an inch across, for compressed air. Having rigged up a dozen barrels to receive his hypothetical sulphur, he turned on his pumps and waited. He waited a long time. There had been such comedy made of the idea that he wanted to make sure of melting his sulphur. At last he opened the release valve, was greeted by a spurt of brownish liquid with an awful smell shooting up from the mine. The barrels were simply useless. Frantic men dug trenches to collect pools of melted Atom S, and the most efficient of all mining processes in the world was achieved.

Although the Frasch patents were originally owned by Union Sulphur Co., they have now expired, the Louisiana deposits are extinct, and both Texas Gulf and Freeport Texas use Frasch methods. Millions of gallons of water at 330 degrees Fahrenheit are pumped into the earth by these companies every day—up to fifty tons of water out of vast blue reservoirs for every ton of brown liquid sulphur that is raised to the surface. Still liquid, the sulphur is run through steam-gutted pipes to distributing tanks, whence it is pumped to temporary bins 600 to 1,000 feet long, forty feet high. Here it is accumulated very slowly, each

From the freight car to the Hold

IMPORTANT are the savings and marked the efficiency offered by Baltimore's well-planned rail and water terminals.

Take export freight, for example. Baltimore's rates show a saving of 60¢ per ton—an average of $18.00 per carload over shipping routed via New York or Boston—the result of a rail differential in Baltimore's favor of 3¢ per hundred on freight for export through her port.

On import freight, the saving is even greater—it ranges from 3¢ to 8¢ per hundred. For Baltimore's efficient net-work of terminals connects with 300 vessels of 58 different lines sailing monthly to 115 leading ports of the globe . . . Truly a service summed up by the slogan "From the freight car to the hold".

Figure these Baltimore savings in your shipping costs and in today's battle of prices. This $18.00 per carload saving can just as well be yours.

And if the Baltimore Trust Company can be of service, please command us. We stand ever ready to finance foreign shipments—and cooperate in the expansion of foreign trade.

An interesting booklet, "Locate in Baltimore", describing Baltimore's shipping and manufacturing facilities, is available on request. Just write us.

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BALTIMORE · MARYLAND

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accumulation being given a chance to solidify, and is finally blasted for shipment. No water comes out of the mine with the sulphur because Atom S is heavier than Molecule H_2O, sinks to the bottom. But water is constantly drained away by bleeder wells from which it emerges at about 180 degrees Fahrenheit and is sent back to the boiler plant where it is used to pre-heat fresh water entering the boilers.

Such is the method that enables Texas Gulf and Freeport Texas to out-produce and undersell the world. The method cannot be used in Italy because the geological formations are not adapted to it. Italian sulphur deposits are mines, those of Texas are really wells; nor is the geological setting so favorable anywhere else in the world, being the envy of miners and industrial chemists everywhere. Even thus has Nature, with her usual indulgence toward Atom S, set him up as a 20th century hero—the glass of fashion for the chemical industry and its mould of form.

TEXAS GULF SULPHUR CO.

Production 1929: 1,403,640 long tons
Net profit (before depletion): $16,247,478
Earned per share (before depletion): $6.40; dividend $4.00

Texas Gulf is the low-cost sulphur producer of the world. It was organized in 1909 as the Gulf Sulphur Co. by Bernard M. Baruch of New York and Colonel S. W. Mudd of Los Angeles. In 1919 the house of J. P. Morgan bought stock, together with Colonel William Boyce Thompson, who is no longer a large holder. Enter also in 1919. . .

President.—Walter H. Aldridge, distinguished mining engineer of the West, chief mining metallurgist of the Canadian Pacific, 1897 to 1911, and managing director of the Consolidated Mining & Smelting Company, which developed the giant lead smelting and electrolytic lead refinery at Trail, B. C. He has been president of Magma Copper Co., managing director of Inspiration Copper Co.

Officers.—Vice President Charles F. Ayer of New Rochelle, president of Newmont Mining Corp.; Vice President Wilber Judson; Secretary-Treasurer Henry F. J. Knobloch.

Directors.—George Whitney, able partner of J. P. Morgan and Co. since 1920, director of Guaranty Trust Co. of New York, The Pullman Co., General Motors Corp., and a dozen of the nation's leading industries; Thomas S. Lamont, one of the youngest of the Morgan partners; Herman B. Baruch, tall and stately member of the board of managers of the New York Cotton Exchange; Clarence M. Woolley of the American Radiator Co.; Harvey S. Mudd, Los Angeles, California; Walter H. Aldridge; Charles F. Ayer; Wilber Judson; Henry F. J. Knobloch.

FREEPORT TEXAS COMPANY

Production 1929: 916,260 long tons
Net profit (before depletion): $4,085,042
Earned per share (before depletion): $5.60; dividend $4.00

President.—Eugene L. Norton, by way of contrast to Mining Engineer Aldridge of Texas Gulf, is a Baltimore financier. In 1921 he organized and became president of the Atlantic Trust Co. of Baltimore, combined this with the National Exchange Bank of Baltimore, combined this with the Baltimore Trust Co., largest Baltimore bank in Baltimore's most magnificent office building. A close friend of Langbourne M. Williams of John L. Williams & Sons, Richmond, Virginia, who were members of the original Freeport Texas syndicate, President Norton was not unfamiliar with the affairs of the company when he took charge of them in the reorganization of April, 1930, largely brought about by . . .

Vice president-treasurer.—Langbourne M. Williams Jr., wiry, energetic graduate of the University of Virginia and the Harvard Business School. Because his father's firm was receiving so many unanswerable inquiries about Freeport stock he set out with his Virginia drawl to investigate. He was backed and encouraged by . . .

Chairman of the board.—O. R. Seagraves, self-made Texan of Moody-Seagraves Co., organizer of the United Gas Corp.'s super-gas system. Mr. Seagraves is also connected with Electric Bond & Share interests.

Directors.—George Gordon Battle, Edward N. Chilson, Elmer G. Diefenbach, Herbert B. Flowers, Charles B. Holladay, Ralph C. Holmes, P. George Maercky, William L. Moody III, Lindley C. Morton, Victor G. Paradise, Lewis E. Pierson, Edward H. Thaete, John Hay Whitney, Frank A. Wills, Eugene L. Norton, O. R. Seagraves, Langbourne M. Williams Jr.

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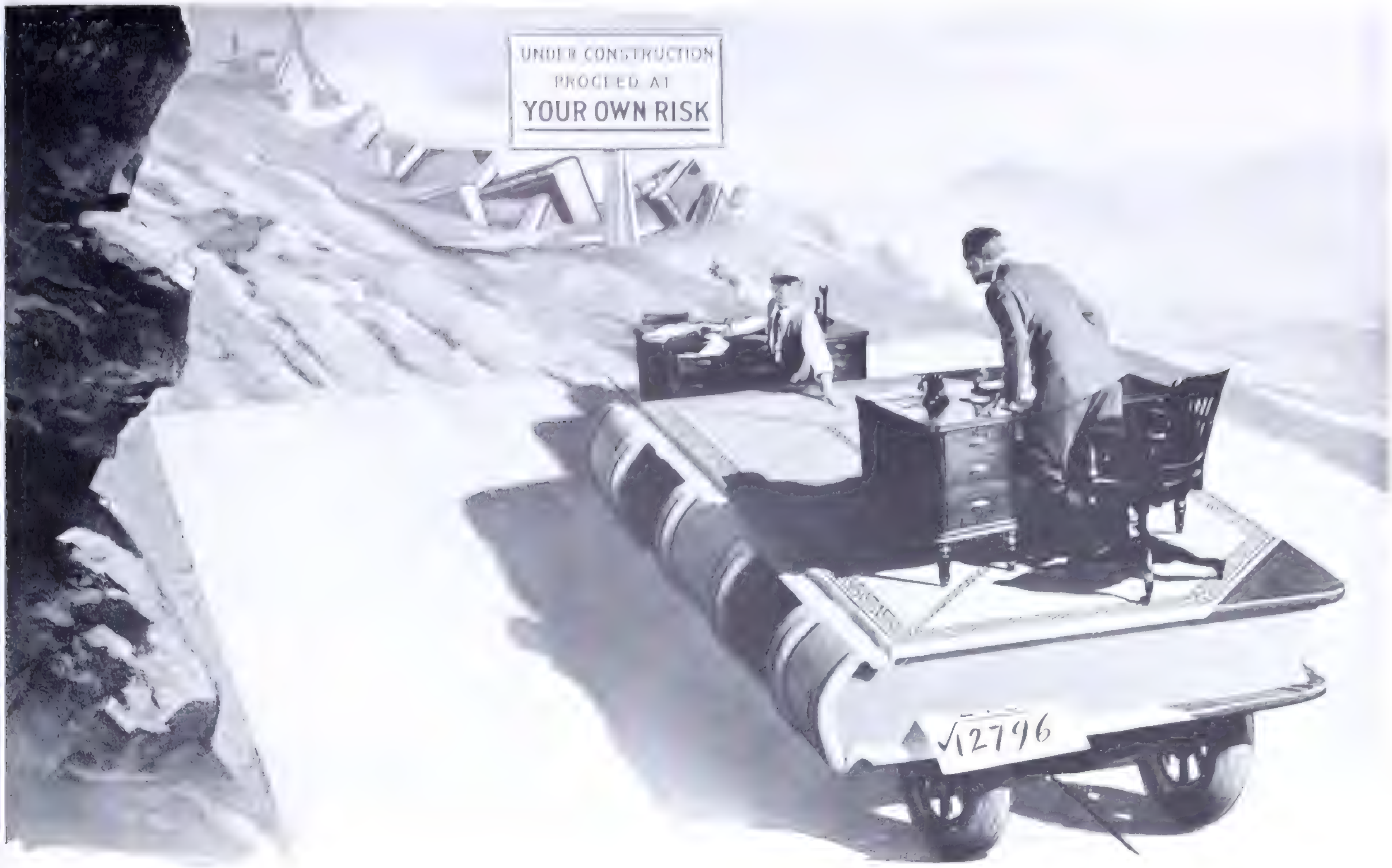

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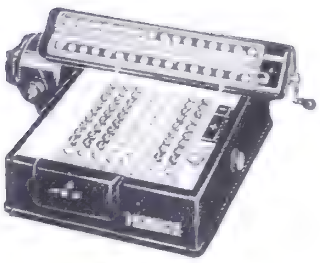

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Man and Woman and the Public

[*Continued from page 41*]

Romance, tempestuously histrionic . . .
JOHN BARRYMORE

As the "Screen's Greatest Lover," his classic profile turned monotonously to the camera, he was beginning to pall as a silent picture attraction when the talkies liberated the resonant Barrymore voice, tripling his value. *General Crack*, the highly expert and successful costume romance that was his first talkie, was followed by the slapstick hilarity of *The Man from Blankley's*, a picture in which Barrymore, as a society inebriate, hiccuped and reeled with obvious gusto, even permitted himself to be gastronomically deceived, in full evening dress, by a roast rubber duck. His exuberant holiday from chronic film amorousness reached another climax when, as peg-legged Ahab in *Moby Dick*, he hacked to pieces a screen whale resembling a large mattress. In the silent era, he would not have been permitted such changes of appeal; now his versatility is an added attraction.

Manhood, charged with undefiled primitive strength . . .
GEORGE BANCROFT

His vogue has been hurt because he has had to play in bad pictures. The formula generally used for him (a strong man fighting alone against enemies who plotted to overthrow him by subterfuge) ran so thin that its unrealities were, in *Mighty* and *Ladies Love Brutes*, more than he could handle. Because of the difficulty of finding the right sort of story for him, it is likely that his importance is on the wane.

The old school of dramatic acting, brilliant and colorful . . .
GEORGE ARLISS

Symposiums of critics everywhere voted his *Disraeli* the best picture of 1929. In Galsworthy's *Old English*, he will undoubtedly rate well up in the best ten for 1930. But although Warner has made immense capital of him by the simple process of taking photographs of his great stage hits, he will soon have run through his repertoire. Since George Arliss is sixty-two years old and since it is unlikely that studio hacks can arrange any stories as satisfactory as those the leading playwrights of twenty years wrote to order for him, his future in sound pictures is problematical.

The handsome young hero of cinema tradition . . .
RICHARD BARTHELMESS

His ability as an actor, often questioned, became definite as soon as he could talk. He was cast in pictures, notably *Drag*. He stands high among veteran stars whose value has been increased by the sound device.

Sentiment, in its masculine aspects for first-love fables . . .
CHARLES FARRELL

Continuing to draw as Janet Gaynor's team-mate, he proved that he could talk all right and even sing a little.

Humor, combined with sex appeal . . .
RICHARD DIX

He was not consciously humorous in one of Paramount's first color pictures, *Redskin*, but the company found more uses for his talent in lighter stuff. His first silent picture success had been in straight romantic roles. Now he plays popular comedies engagingly for the microphone. This ability, combined with his exploited physique, induced RKO to buy him from Paramount at a price which, though high, they have not regretted.

Uproarious modern clowning with a character angle . . .
JACK OAKIE

His is the only first-rank comic talent developed by the talkies. The development took place in a few months on the Paramount lot where he rose from insignificant parts to having his name in lights. Like all true comedians, he makes even his wildest fooling human and remotely pathetic. It is current, home-bred, democratic fooling (*The Social Lion*, *The Sap from Syracuse*), probably not exportable but wildly contagious in the U. S. Oakie is on the way up while the great foolers of the silent era like Lloyd and Chaplin are on the way out. He is the precursor of the great arch-clown of the future talkies who will some day convulse the world.

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Color and Sound on Film

[*Continued from page 35*]

1929-30 pictures were made in color), and as for black and white pictures being obsolete in contrast with color pictures—that simply did not occur to the movie public. So for 1930-31 the trend seems definitely in the direction of less, rather than more, color. First National and Warner Brothers are postponing the fulfillment of their contracts with Technicolor—a procedure which was in any case necessary, since Technicolor simply could not print the pictures as fast as Hollywood thought it wanted them a year ago. So far has the color wave declined after its tidal sweep last winter that some movie executives have pronounced it of small importance. But in this they are likely to be quite wrong again. To be specific, there are two kinds of film plays for which color will almost certainly become essential: the musical comedy and the costume or spectacle drama. Both these types will rise and fall in popularity, but they will always be a big factor in the business. The talkies definitely added the musical comedy to the movie repertoire. From now on it seems likely that this type will increasingly become associated in the public mind with color, so that a film musical without color will not seem like a film musical at all. A similar mental association will not occur so definitely in the spectacle drama, but anyone who saw *Song of the Flame* or *The Rogue Song* will realize that if a producer is offering the spectacular he can hardly afford to omit the spectacular qualities of red and gold and purple. A public accustomed to red torches flaming in the night will not accept a parade of ghostly candles without the ghosts.

However, all of this sort of stuff is *not* the backbone, the meat and drink, of the movies. The big elaborate or sensational pictures are essential to the movie business, but they do *not* account for the bulk of the box office receipts. People go to the movies primarily to watch and to hear two or three human beings collide with each other in what is represented to be life. With the silent, and now more than ever with the talkie, the play is the thing. So, after allowing that 20 per cent or even 30 per cent of the movies must be in color for the special reasons just indicated, the great question is: is the time near when the ordinary play of love or adventure must be made in color?

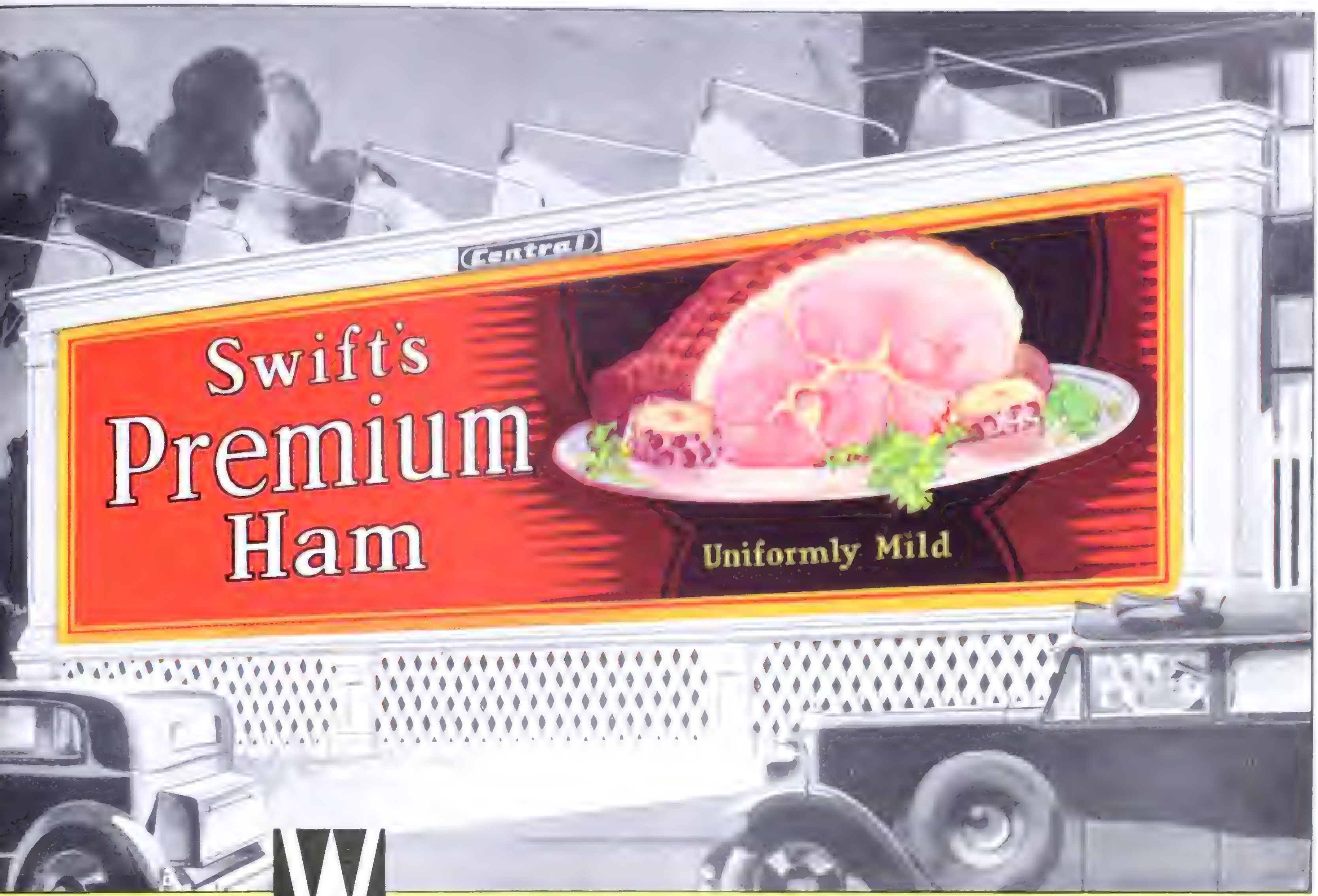
Certainly the time has not yet arrived; it is probably several years and perhaps a decade away. Simply put, the reason comes down to this: to the degree that we are aware of the imperfection of color it is a distraction and consequently hinders rather than promotes dramatic action. To cease to be a distraction, color must be so perfect as to be *unnoticeable* except by contrast with absence of color. Or, what is more likely, we must become so accustomed to the imperfections of color as not to be distracted by it. Such perfection or such psychological adaptation is in all probability many, many years away. As for perfection, it is almost certain that an entirely different scientific principle must be employed before it can be expected. As for psychological adaptation, the more imperfect color we see, the less it will distract us until finally we will accept it as a convention and will be distracted when it is absent. Ultimately *all* movies are likely to be in color; until then every producer will be on his guard against failure to keep up with the color convention.

Meanwhile, technical improvement, however slow, may be expected. And almost as important as technical advance will be advance in the film theatre use of color. Two examples: use color to lengthen the life of favorite stars, for color hides the wrinkles: use it more soberly and hence less distractingly—green lawns, green trees instead of a continued riot of roses.

Historic date

Undoubtedly producers jumped too fast at color this year. But to understand why they have good reason to jump at *any* new offering of invention, it is necessary only to grasp a few dates in the history of sound. These are dates in what we have already described as by all odds the most remarkable single revolution in industrial annals. Sound came so fast (it became "natural"

[*Continued on page 127*]



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Color and Sound on Film

[*Continued from page 124*]

so soon) that practically nobody (and least of all the movie critics) realized what was happening until it happened. Even the producers were in the condition of learning on Tuesday that what they thought might occur a year from Tuesday had actually happened a week ago Monday. In April, 1929, Fox's Mr. Sheehan, simultaneously with his company's complete surrender to the talkie, boldly predicted that by January 1, 1931, there would be 3,000 theatres wired for sound. There are today 10,000 such theatres. Let us fix a few essential dates in mind because, for once, a mechanico-economic development happened with the historical exactitude of a Napoleonic campaign. The first date is October 6, 1927.

On that night the Warner Brothers' theatre on Broadway and Fifty-second Street (the only one they owned—now they own 700) was flashing in electric signs: *Opening Tonight—Al Jolson in The Jazz Singer*. A fashionable crowd streamed through its portals, for Al Jolson was the embodiment of Broadway; now as a film product of Hollywood he was as great a novelty as would be King George V in the guise of President of Canada. He had been in Hollywood for months: tonight would appear the strange result of his new labors. They had been labors indeed—singing bit by bit to a microphone while being photographed bit by bit, and trying to act a part the while. Not only was it new to him; it was new to everyone of the dozens of cameramen, directors, other actors, and mechanicians that crowded about him while he pretended to be a Jewish boy singing devoutly in the choir or fondly patting his mother in an obscure flat in the Ghetto. Out of all the labor and confusion what had come? The smart audience wanted to know. But most curious of all were the Warner Brothers. This picture had cost them more than $500,000, and there were less than 100 theatres in the whole wide world where it could be shown. Would the sensation be great enough instantly to cause 100 other theatres to wire themselves? But Warner Brothers' gamble was even greater than that. On the development of sound they had at this point invested about $5,000,000, and this was the final test. For while *The Jazz Singer* was not a talkie, it was the first full-length film drama containing sound as part of the dramatic action. If this excited the public, then Warners with an *exclusive* contract with Western Electric had an unbeatable lead on the entire movie industry and might make hundreds of millions of dollars. If this failed to excite, then the chances were that the Warner Brothers were through.

The actual making of *The Jazz Singer* was supervised minutely by Brother Sam Warner. He had finished it in August. From Hollywood he dispatched the film and sound records to Senior Brother Harry in New York. He expected to come on to the opening, but on October 1 he went to the hospital. Pneumonia. Brothers Jack and Albert were at the bedside. Next day the news was so bad that Brother Harry left New York for Los Angeles. At short intervals across the continent he got bulletins about Brother Sam, who was not only the most beloved of all the brothers, but also the one who had first seen the possibilities of sound and had done most to develop it from apparently hopeless beginnings. In Arizona, Brother Harry got a special train. When he arrived in Los Angeles the morning of October 5, Brother Sam had been dead three hours. On the night of October 6 *The Jazz Singer* opened on Broadway.

Born in a cloud of theatrical glory and under the shadow of death, the career of sound was from that moment dramatic in each and every detail. For example, there was the matter of the noises that would get into sound records, despite all human precautions. One sound record was unexpectedly found to contain the words "This is Station ZXZ"—so sound recording had to be insulated against the inaudible inference of radio waves. But particularly baffling was a continuous buzz that seemed to pervade all sound records. The Western Electric experts could find no explanation. One day Old Frank Murphy (old only in Warner service: a mechanic Brother Sam had picked up years ago) was called in. He

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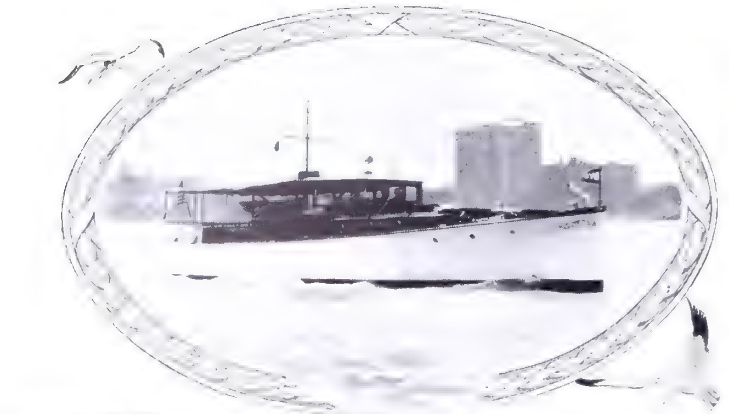

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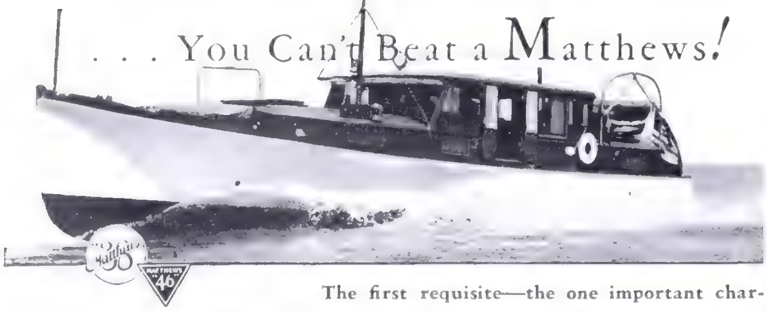

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looked, looked, looked, finally said: "The lights." From that moment Klieg lights were doomed, and today only incandescent lights are used in Hollywood—quiet but terribly hot, making paint melt on the face. (But, also, incidentally these new lights do not require the ghastly extremes of make-up with which silent cinema actors used to be plastered.)

The Jazz Singer was a tremendous hit. Jolson's "maaamie" came out in a glorious thunderous plaint, his vulgar negroid lips trembling visibly while the notes echoed. But it was not the songs which made *The Jazz Singer* historically famous. It was one line—one spoken line, which happened by accident. Out on the Hollywood lot Jolson had stepped up to the microphone to sing. In order to re-create the correct mood he had said, "Come on, Ma. Listen to this." The recording device had begun too soon, accidentally recording those words, and the director had decided they might as well be left in, even though all the non-song part of the picture was silent. The night of October 6 the smart folk were thrilled by the most famed of all blackfaces visibly singing before them, but what took them out of their seats was that one remark in the natural Jolson speaking voice. That made them forget mechanism. That gave them the complete illusion of Jolson's physical presence. From that moment the silent picture was as completely doomed as the lantern slides, with which Warner Brothers had begun their astounding career—from poor sons of a Polish immigrant in Newcastle, Pennsylvania to impresarios of the fastest revolution in industrial history.

And the new epoch

But on October 7 the big producers (Paramount, Fox, M-G-M, United Artists) were not convinced or at any rate refused to admit that they were. They said *The Jazz Singer* merely proved that songs by Jolson could carry one whole picture; they ignored that one true talkie sentence. But the Warners were convinced. They immediately introduced talkie sequences into the three pictures they then had in production (*Glorious Betsy*, *Tenderloin*, *Lion and the Mouse*), and in February, 1928, they released the first all-talkie: *Lights of New York*. For this last, great credit must go to Bryan Foy, who for a year had been getting out talkie "shorts." These shorts had taught him how to do it. By spring of 1928 the dam had burst—big producers could no longer resist the infatuation of a public for what it correctly sensed to be a new epoch in the film theatre. But it was autumn of 1928 before any producers except Warner Brothers could get even so much as some talking sequences into their pictures. And by that time they were out with Al Jolson's *The Singing Fool*, were making all their pictures all-talkie. The year's start had put millions in their pockets—some eight or nine during the year 1928. *The Terror* (Louise Fazenda) had netted $110,000 after it had played in just *one* theatre—Warner Brothers, New York. *The Singing Fool* grossed $40,000 a week for months at the Winter Garden. All of which in one year took Warners from among the least to among the greatest of all movie companies. They bought out First National and the Stanley Chain of theatres. Their assets increased from $5,000,000 to $160,000,000 in two years. Last year they bought out several of the leading music merchants of Broadway, as well as a producer of Broadway plays.

But now, the autumn of 1930, Warner Brothers are far from having a monopoly of the art which they invoked and induced. During 1929 all the other producers, with harrowing expenditures of nerves and money and ingenuity, caught up with them by transforming themselves from silent to talkie. Western Electric persuaded Warner Brothers to alter the terms of their exclusive contract. Between Western Electric and Warner Brothers some feeling now exists. Without inquiring into the rights and wrongs of this matter, it would seem that such a colossal development could not be left as the prerogative of one concern. But as it is, Warner Brothers get 3 per cent of all the money taken in by talkie licenses—a great pain, of course, to their competitors. The adaptation of talkie was just as remarkable in the case of those who followed Warner Brothers, for while they borrowed much of the experimental knowledge, they had to absorb it much faster. Consider Paramount. In 1928 it released seventy-eight silent pictures, no talkies. In 1929 it released twenty silents and forty-seven talkies. In 1930 it released sixty-five talkies, no silents. (These are full-length

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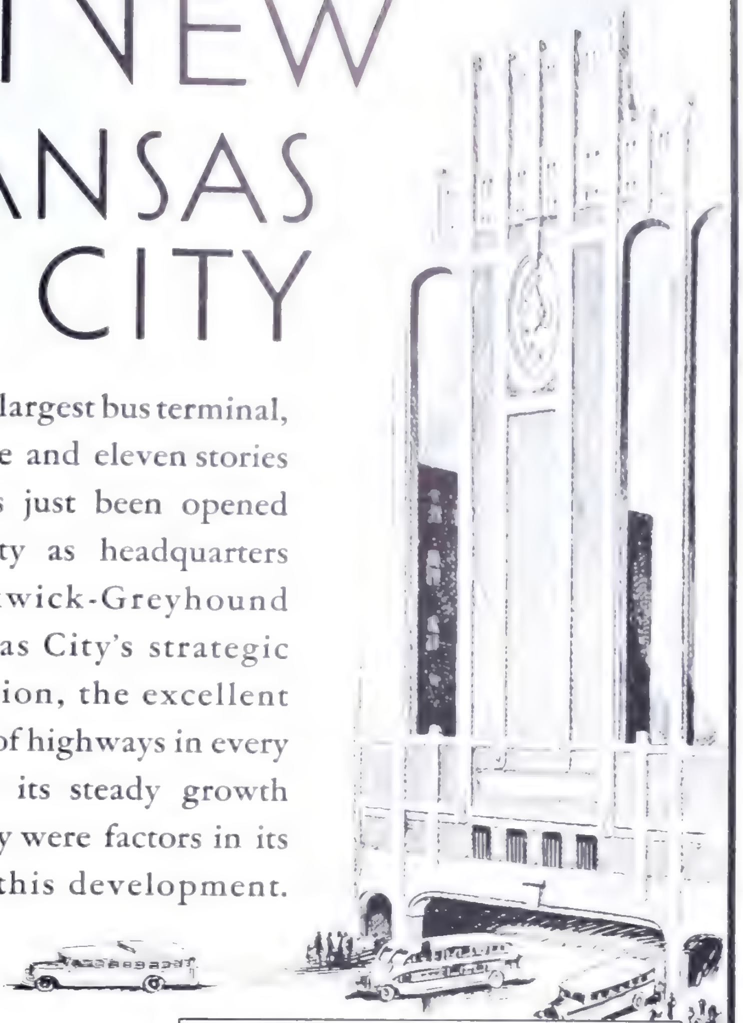

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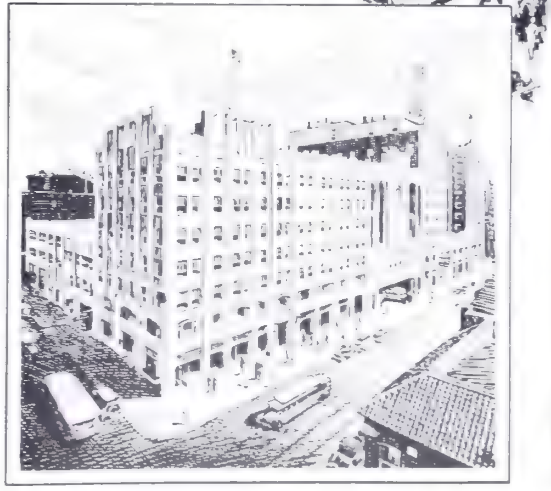

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KANSAS CITY, MO.

♥

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♥

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pictures and do not count news reels, comedies, cartoons, etc.)

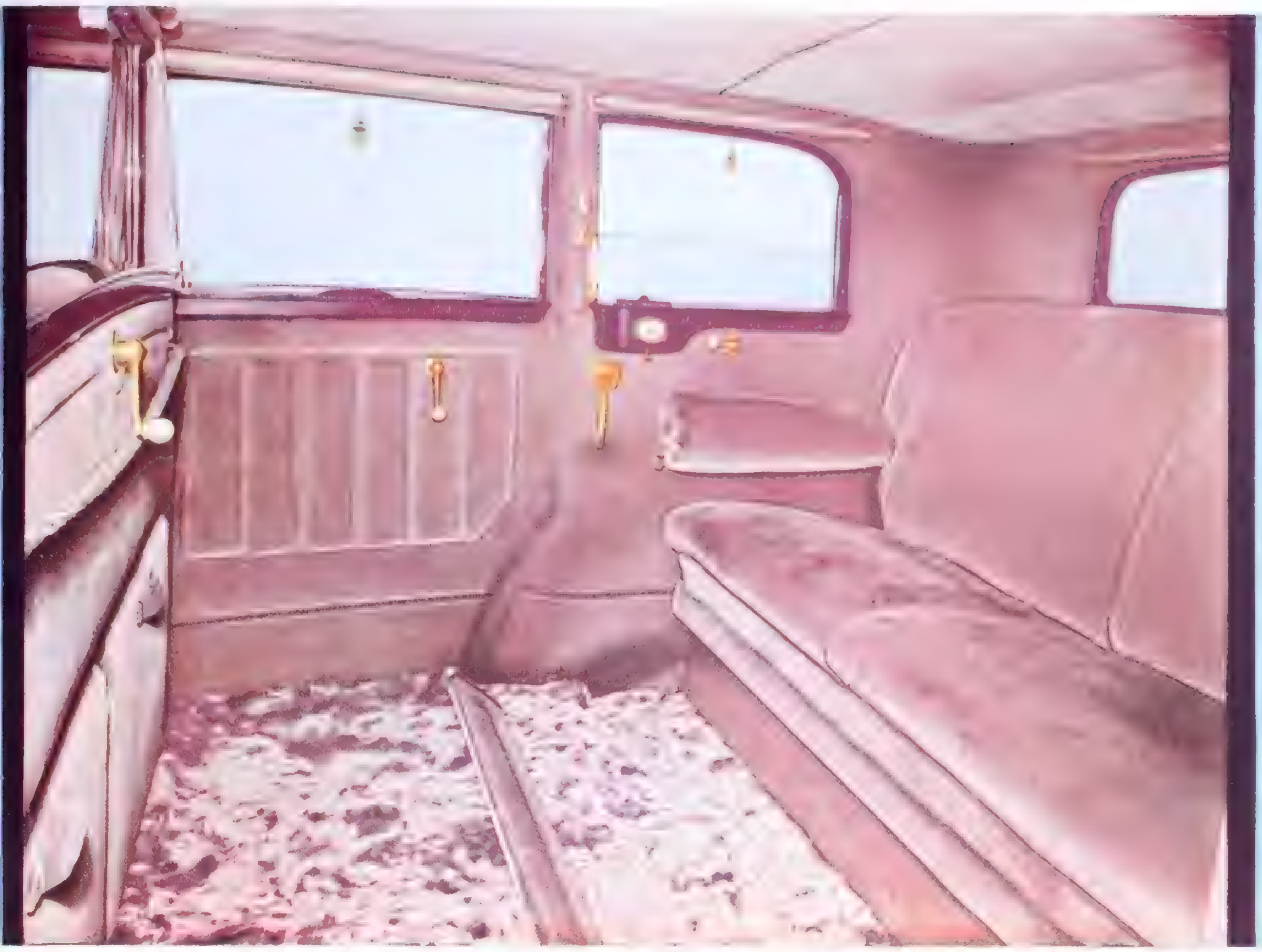
So great was the public's infatuation that in 1929 every producer made big money and, far more remarkable, nearly every single talkie made money. Net profits for leading concerns:

	1929	*1928*
Warner	$17,271,805	$2,044,842
Fox	9,469,050	5,957,217
Paramount	15,544,544	8,713,063
Loew's	11,756,956	8,568,162

But now, as we have said, the first golden harvest is past; the public is taking its talkies critically. And meanwhile, new problems present themselves, the most obvious being that of foreign markets. In its Paris studios, Paramount is making each picture in four or five different languages, each with a different cast. Where the original English picture cost $400,000 or $500,000, the "translations" cost $50,000 or $75,000 each. The Spanish version may well repay the extra cost from the South American market. But it does not pay to make a version in Czechoslovakian. Thus, while the revolution in the greatest of all show businesses is a completely accomplished fact, there remain the resultant problems otherwise known as "gambles."

It is probably true that the greater complications of the talkie and color (as well as other mechanical developments such as "wide film" and the newly announced stereoscopic effects of the Spoor method) will make it harder to make money out of movies. A few small firms are making good money (Tiffany scored heavily with *Journey's End*). But it is no longer a business for the lone adventurer. Not only have mechanical developments speeded the logical concentration of the business into a few hands, but the whole character of the business has changed by reason of the control of theatres by producers. With complicated finance as well as mechanics, it is natural that the hand of the trained financier should be more evidenced: Kuhn, Loeb in Paramount, the "electric interests" in Fox and RKO, Goldman, Sachs and recently Hayden, Stone in Warner Brothers. But let no one suppose that these financiers intend to run the show business. They know enough to know that only a showman can make a movie which even they themselves would care to see. So it would be a mistake to credit financiers for subsequent success or failure c any company with respect t gate receipts. There is, for example, the question of stars.

For years, producers have bee "trying to get rid of the sta system." They had good reason the big stars were demandin everything in sight and jumpin their contracts when somethin more appeared. The talkies gav producers an excellent chance t reduce the importance of stars and it was further thought tha the Wall Street influence wa strongly against the fantasti Hollywood salary scale. But a the first all-talkie year comes t a close, one fact looms: the star of silent days are surprisingly intact. Of the thirty or forty leading names and faces, all but hal a dozen are names and face which had achieved a momentum of public favor over a perio of years. Thus in spite of th completely new deal which talkies represented, it was not so eas to put over the unknown face o name. And together with thi fact is a growing conviction: tha there will arise talkie stars whos magnetic influence upon th public will exceed anything eve seen in the days of Chaplin o Pickford. Cost what he or sh may, the company which ha him or her on contract will ear its dividends on a picture or two while other companies bite th dust for their lost opportunities Certainly the showman, his imagination fired by such a prospect, must not become hysterica in reaching for this or that star But actually he knows that th star system is immortal and universal, operating from Lillian Russell in the nineties to Me Lan-Fang in China to the Greta whose picture could be advertised simply and solely by saying "Garbo Talks." Executive and financial committees can preven the system from disrupting th industry, but they cannot fundamentally alter the system. On pages 36—43 FORTUNE describe some of the cinema actors who are found to be most successful a this stage in talkie-development Leaving aside such special performers as operatic tenors or Wil Rogers, this list represents the first winners in the race for popularity in the photographic spoken drama. None of them commands the adoration given to silent stars of four or five years ago, and perhaps none of these ever will. But as the first to succeed in a new art, they have a collective historical value which no later and greater group can equal.



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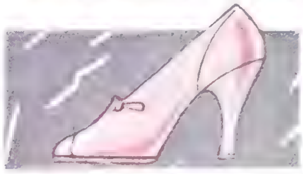

A lady's slipper . . . worn by Her Highness, the Maharani . . . was sent to this country as the pattern for texture and shade for the interior of the royal limousine. A graceful compliment to an Eastern princess, and an acknowledgment that like her Western sisters of Fifth Avenue, a lady's choice is a man's criterion of decorative values.

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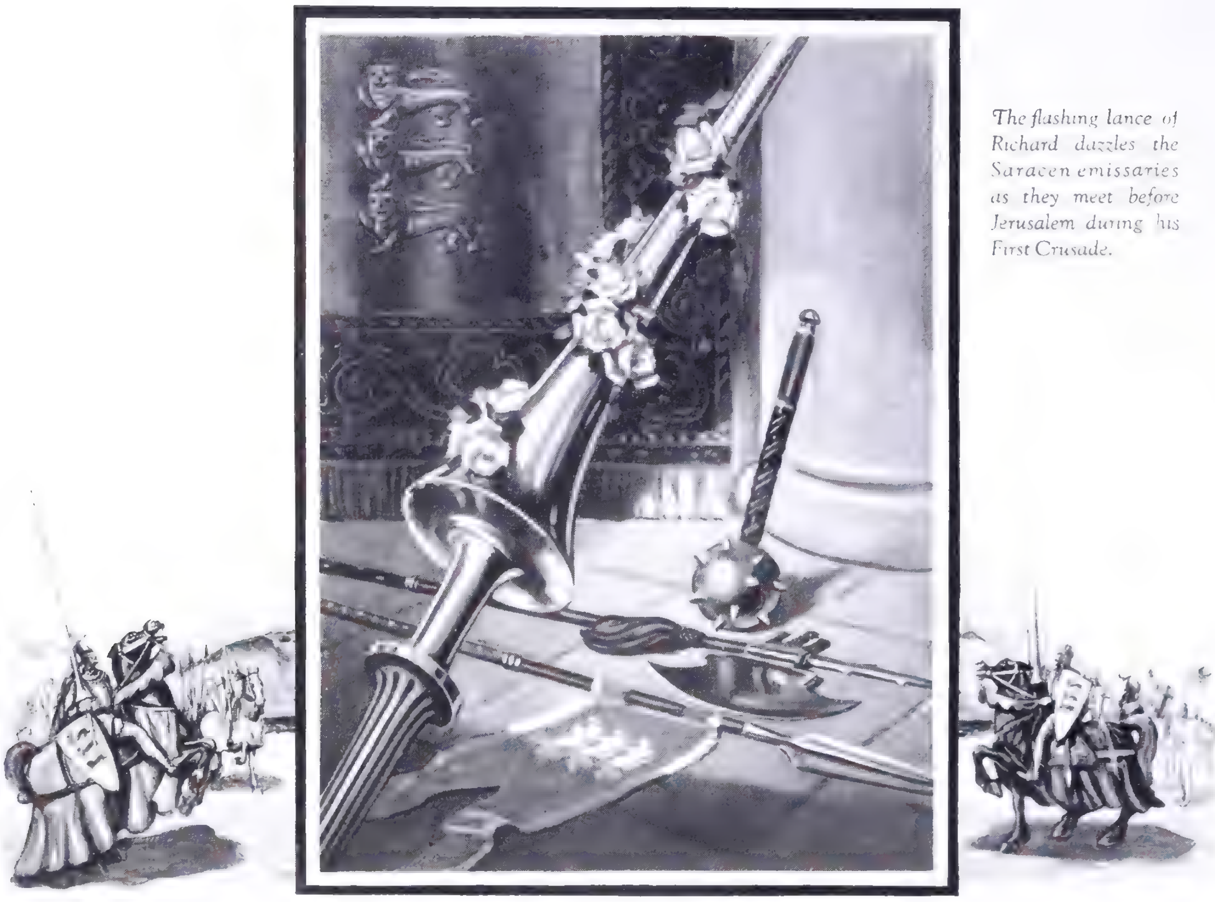

The flashing lance of Richard dazzles the Saracen emissaries as they meet before Jerusalem during his First Crusade.

Lance of Richard. Painted by Ludwig Gassner

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Two Able Britishers Work Effectively in Food, Finance

SCARCE, recently, have been British financial achievements. Beween loss of gold and lack of jobs, ews originating in the British Isles as been largely bearish. Last month, owever, two sons of Britain recorded otable financial accomplishments. To ir Otto Niemeyer, of the Bank of ngland and the League of Nations inancial committee, went credit for elping Australia out of a bog of near-ankruptcy. To Major Colin Cooper, f International Tea Company Stores, td., went credit for promoting a ritish retail grocery merger resultng in a 6,000 unit chain. The U. S. bserver was concerned with Sir Otto's erformance because of $150,000,000 . S. dollars invested in Australian onds, in Major Cooper's as an intance of a vertical merger rarely seen n this country.

Australian difficulties were cumuative rather than unexpected. Ausralia has a population of about ,500,000 and an area of some ,000,000 square miles. About 37 per ent of the people are farmers and erders, with wheat and wool the hief Australian exports. The city opulation (63 per cent) has until ecently been very prosperous, aided y a tariff, a state program of public works, a system of fixed minimum wages, and other expensive and paternalistic governmental measures. With he city dweller importing high-priced oreign manufacturies and the farmer nd herder selling wheat and wool n a constantly falling market, Ausralia's imports have exceeded exports, nd the lower the prices of commodiies, the more unfavorable the trade alance. Furthermore Australian Cabiets, apparently with a haphazard inancial policy, continued to borrow money at the rate of about $200,000,00 a year, until the federal and state overnments together had an indebtedness of about $5,000,000,000, of which more than $500,000,000 has matured or is maturing in 1930. Widespread unemployment recently ecame a further grave complicaion.

Thus the present Australian Government (a Labor administration headed by Prime Minister James Henry Scullin, wavy-haired Irishman) nherited almost insoluble difficulties. Last summer was made a violent but belated effort to adjust the trade balance by absolute prohibition of a long list of imports, but the door was padlocked after the horse had been stolen. When Sir Otto was called in to see if the Bank of England could keep the Down Unders from going under, he found some $180,000,000 in early and unmeetable securities. Shocked was Sir Otto, who, though only forty-seven, has been a man of finance for twenty-four years, entering the service of His Majesty's Treasury in 1906 and holding the position of Controller of Finance from 1922 to 1927. He told Australia that it was off its budget equilibrium and its exchange equilibrium and that no dominion, not even India, had a lower credit. Having scolded, Sir Otto then helped. An arrangement was made whereby the Bank of England will take up the various items of the $180,000,000 indebtedness as they fall due, replacing them with long-term obligations which Australia should eventually be able to meet. Meanwhile the Australians agreed to eliminate various civil service offices and to reduce the salaries of other public servants, also to publish a monthly financial statement. Sir Otto, his work accomplished, sailed from Melbourne, leaving behind him a warring Cabinet, part of which wished to reduce jobs and salaries, according to the agreement, but with an Opposition which maintained that there was no method of making the budget balance anyhow and that fewer jobs and smaller salaries would be only a futile and painful gesture.

· · ·

Major Cooper's chain-making (or rather chain-combining) accomplishment unified five large British retail grocery chains in a consolidation capitalized at $57,000,000 and known as Allied Stores. Three of the five chains represented in Allied—the Home & Colonial Stores, the Maypole, and the Meadow Dairies—are controlled by Lever Bros., soap-makers, who will reputedly have a 20 per cent interest in Allied. A fourth chain is Lipton's, Ltd., from which, however, Sir Thomas Lipton has withdrawn, and the fifth is International Tea Co. Stores, Ltd., which Major Cooper personally and entirely purchased for more than $110,000,000. Allied Stores represents control of retail trade by the producer, thus eliminating the wholesaler from the greater portion of the retail food industry, and is altogether different from the U. S. horizontal merger exemplified by General Foods and Standard Brands. The only U. S. counterpart is the Great Atlantic and Pacific Tea Co., in so far as the A. & P. organization has gone into the production of the merchandise it retails [FORTUNE, July, 1930]. As U. S. food chains continue to grow, however (and, in growing, to push their private brands in preference to nationally advertised products), it is possible that the U. S. makers of nationally advertised food-stuffs may be forced into the retail field in order to retain their distribution.

"I bought it (International Tea) as my own principal and paid for the whole lot," said Major Cooper, who is six feet tall, plays squash and tennis every morning, served in the Royal Flying Corps during the War (in which two brothers were killed), and after service in France rose to the command of British aviation in India. His father was the late Sir Alfred Cooper, millionaire founder of the Star Tea Company. Discussing Allied affairs, Major Cooper said that great companies were needed to buy the best brains and that no effort would be spared to endow Allied with the finest executive talent. Public school men, added Major Cooper, were desirable, but many were inclined to favor entering the professions. "There is nothing," said Major Cooper, "to be ashamed of in going into business. I certainly am not ashamed."

Kreuger Into Phones, Copper

IN THE life of Stockholm's Ivar Kreuger, every month is a very busy month. The affairs of Kreuger & Toll are always in a state of motion. And so are the affairs of its subsidiaries, which include Swedish and International Match, the Grangesberg Iron Mines (Europe's biggest), several large banks, pulp, timber, real estate companies, and many lesser and incidental corporations. Last month, however, tall, pallid Herr Kreuger turned his attention to more things and bigger things than usual.

Kreuger & Toll is of course Sweden's richest, most powerful, and best known enterprise. This wealthy Swedish concern enjoys world-wide reputation, but because it is relatively new into the outer realms of finance as Kreuger & Toll, it is a company Herr Kreuger has watched with interest. From now on his interest will be much more than casual.

This other corporation is the L. M. Ericcson Telephone Co. It began as an equipment manufacturer, a business it still carries on through several large plants. But it also operates telephone concessions, one on this continent (Mexico), one in South America (the Argentine), and a half dozen in Europe. It is a direct competitor of America's International Telephone & Telegraph, and for that reason patriotic Swedish financiers were alarmed recently when they heard that I. T. & T. was angling for the control of Ericcson. To defend Ericcson, they set up a stockholders' defense committee, the need of which was eliminated last month when Herr Kreuger obtained sufficient stock to give him representation in Ericcson. This sufficiency turned out to be enough to enable Kreuger & Toll to direct Ericcson's future affairs. The deal will give Ericcson the benefit of Kreuger & Toll's vast financial resources and of course makes Kreuger & Toll even greater in international finance than hitherto.

A deal that will further strengthen Kreuger & Toll's vital position in Sweden was likewise revealed with the news that the bankers in back of the new Boliden copper mines (in the northeast part of Sweden, close to the Baltic) have sold their stock to Kreuger & Toll. The amount of stock is said to have reached five-sixths, enough to make the Boliden mines an intimate part of Herr Kreuger's structure. Great reserves of ore are already located in these mines, and construction of modern refineries promises to make them very important to Sweden, for most of the crude ore previously has been exported to Germany and the U. S. (Tacoma, Washington).

Another new Kreuger & Toll step also appeared last month in the well-credited reports that it was participating with leading European banking interests in the formation of a colossal investment trust. The trust's aim will not be investing as such so much as financing European enterprises. One of its aims is said to consist of removing Europe's dependency on American capital.

Meanwhile, the regular Kreuger & Toll routine (which last year earned $29,000,000, 38 per cent more than in 1928) continued. Swedish Match obtained a thirty-year Guatemalan match monopoly by buying $2,500,000 worth of 7 per cent Guatemalan bonds at 90. Four-fifths of this money will be used to establish a Guatemalan farm mortgage bank, the rest for public works. And of even more routine nature was the payment of $46,500,000 to Germany, first installment on a $125,000,000 loan.

Pacific Coast Shipping Active

THE new Japanese liner, *Chichibu Maru,* recently docked in San Francisco harbor with $7,000,000 worth of silk in her hold, the largest silk cargo ever to enter the port. Her arrival was an impressive opening to the gayeties of San Francisco's Harbor Day. Every year the premier port of the Pacific Coast celebrates Harbor Day. This year there were boat races in the harbor between picked crews of merchant vessels, general open house all along the waterfront, an air circus put on by the Navy, and some brilliant fireworks after dark. The main event was the grand parade through the city streets in which the various Pacific Coast shipping companies had their floats and to which several thousand bluejackets from warships in the harbor lent a martial air. The parade was marshalled by the grand old man of Pacific shipping, Captain Robert Dollar, eighty-six year old founder and head of the globe-encircling Dollar Steamship Lines.

Every seaman and shipowner on the Pacific knows shrewd, pious, old Captain Dollar. And nearly every merchant in Shanghai, Yokohama, Singapore, and several dozen other oriental ports knows the Captain. His annual tours are as established phenomena in oriental waters as the monsoons. Stopping in at the ports touched by his boats, he makes personal calls on Dollar shippers, actual or prospective. Perhaps no other American is as popular in the East as is Captain Dollar. He set out this year on September 20 for his thirty-sixth oriental tour. "I'm going on this trip to work and not for my health," he said. "I expect to call on all my friends, business associates as well as competitors, as I always do." With him, as always, went Mrs. Dollar.

The Pacific-crossing record, established in 1923 by one Canadian Pacific liner, has been broken by another. The new *Empress of Japan* (26,000 gross tonnage, $7,500,000 cost) made the crossing from Yokohama to Seattle in eight days, six hours, and twenty-seven minutes. This is four hours, twenty-six minutes better than the old record made by the *Empress of Canada* [FORTUNE, September, 1930].

Baseball Bats .400 in Slump

THE strength of "entertainment" stocks during periods of general depression is one of life's minor mysteries. It may be that a theatre ticket (particularly a cinema theatre) hardly represents money to the person who makes or loses amounts significant on Wall Street, or it may be that a tap dance or a chorus girl provides the depression victim with forgetfulness and relaxation. At any rate, 1930 has been no bad year in the entertainment business, and baseball, traditionally the national game, has experienced one of the most successful years in its history. For some years now it has been conventional to regard baseball as somewhat the victim of the many other sports, especially golf, which have risen to compete with it. During the present year, however, the two major leagues have each taken in approximately $5,000,000, which means that the sixteen major league clubs have played to nearly 5,000,000 customers. Baseball club-owners do not give out detailed attendance figures, but maintain that the 1930 record slightly exceeds that of 1927, the best previous year.

Chicago has been for some years the best baseball town. Its American League team, the White Sox, has been hopeless for ten years, but in the National League, during the *régime* of Owner William Wrigley (gum) and Manager Joseph McCarthy (baseball), the Cubs, 1929 champions, have been consistently popular and have taken in more than a million dollars during each of the past four years. Other National League clubs especially prosperous during 1930 have been Brooklyn, which occupied first place during the greater portion of the season, and New York, which nearly always has a good team and shows a tidy profit. It is probable that both the Dodgers (Brooklyn) and the Giants (New York) passed the million mark in receipts and in attendance. Toward the close of the season the New York club announced that John McGraw, manager since 1902, had been engaged for the next five years at a contract reputedly calling for $70,000 a year. Next to George Herman (Babe) Ruth ($80,000), Mr. McGraw is baseball's highest paid employee, and as Mr. Ruth's contract has only another year to run, and will almost certainly not be renewed at anything in the neighborhood of $80,000, Mr. McGraw will probably be highest paid baseball man in another twelve months. Broadly speaking, baseball teams make money when they win and lose money when they lose; thus the two Boston clubs—both of which have for years finished at or near the bottom of their leagues—have probably been operating at a loss, whereas both New York clubs, also strong contenders, have shown large and steady profits.

Minor league baseball has also enjoyed an exceptional year, especially in those cities which have experimented with night baseball. Des Moines and Wichita (Western League) inaugurated night baseball in the spring of the present year; the innovation has been widely copied, particularly in the south and west. The Pacific Coast League, for example (Hollywood, San Francisco, Los Angeles, Seattle, Portland, Oakland, Sacramento, Missions), which ranks just below the major leagues—Los Angeles is considerably larger than many a major league city—has made night baseball a regular portion of its schedule. Night games are also played in the American Association and the International League (next largest minor leagues) and by many professional and semi-professional teams in smaller cities. Flood-lighting has apparently made the night game altogether practical, although the players themselves frequently object to it. Pitchers maintain that it is difficult to see a ball batted swiftly back at them; on the other hand, however, Mr. Fred Lindstrom, third baseman of the Giants, played an exhibition game at night and, having made several brilliant plays, announced that henceforth he would play daytime ball with a lantern at third base. Night baseball (like night miniature golf) has this year had the tremendous advantage of being a novelty; its success can better be estimated at the end of 1931 or 1932. From all present indications, the major leagues are not likely to take up night baseball in championship games. Except in St. Louis and Cincinnati (where attendance during most of the year was very bad), the owners have maintained that night baseball is not baseball. Why the unemployed congregate at the ball park at a dollar a head remains as yet unexplained.

Bonds Boom

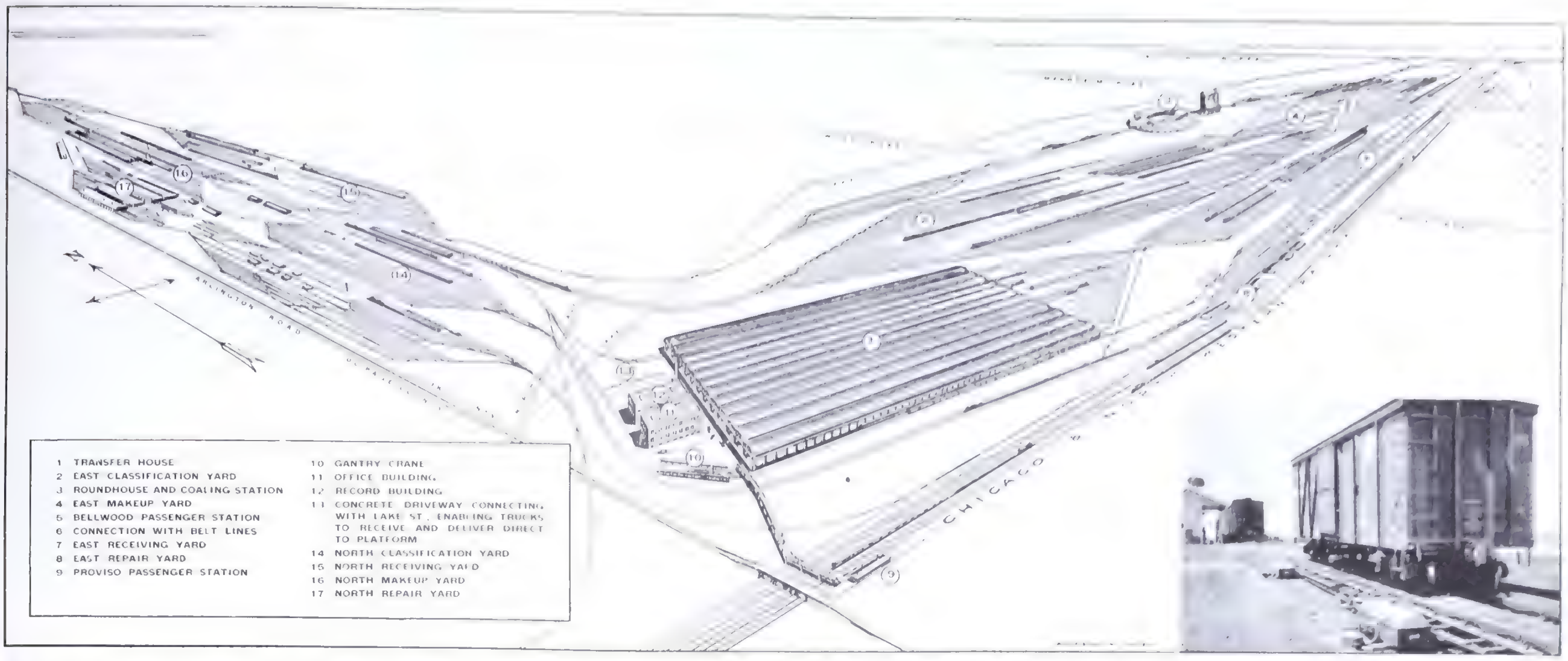
WITH the benefit of a year's perspective, observers of the bond market may well register surprise that the advance in these securities was attended with so much uncertainty. The great surplus of investment funds, correspondingly low rates for credit, and the psychological basis for switching from equities to fixed securities were pointing unmistakably to a rising trend for bonds after the collapse in stock values last October and November. Yet it required about nine months for prices to recover to 1928 high levels for prime issues and the second-grades made heavy weather in trying to participate in the rally.

Artificial respiration applied to industry last winter, combined with reassuring statements from many quarters, served to bolster the faith of a large class of stock owners, who proved to bond salesmen that the investment habits acquired during the preceding two years or so were not to be broken easily. Institutional demand for bonds was rising but the individual buyers were not ready.

It was during the late spring and early summer that the strain began to tell. Bond houses were besought for advice. The conscientious dealer, however, as often as not was hard pressed for an answer. The advice that came most glibly, to place funds in high grade short term securities, awaiting a definite signal from the bond and stock markets, was of little value. Such paper was not to be bought except at most unattractive prices.

There had been, too, an abortive bullish demonstration in bonds in March that had left many buyers, principally professionals, hung up with long lines to be worked off, and there was no sign of a slackening in the supply of new flotations brought to the market by public utility and railroad companies. Yet the investors and traders who followed boldly the traditional signs of a bull market for bonds were rewarded, by the end of the summer, with gratifying profits.

The auguries indicate a continuation of the advance for at least the balance of 1930 and early 1931. The biggest question is whether the second-grade issues will enjoy more popularity. That the market has been mostly in the top rank is shown by the prices of new offerings. Triple-A bonds put out during the first half of the year had advanced three to four points by early September. The "business man's investment" type had slipped back when the syndicate withdrew support.


1 TRANSFER HOUSE
2 EAST CLASSIFICATION YARD
3 ROUNDHOUSE AND COALING STATION
4 EAST MAKEUP YARD
5 BELLWOOD PASSENGER STATION
6 CONNECTION WITH BELT LINES
7 EAST RECEIVING YARD
8 EAST REPAIR YARD
9 PROVISO PASSENGER STATION
10 GANTRY CRANE
11 OFFICE BUILDING
12 RECORD BUILDING
13 CONCRETE DRIVEWAY CONNECTING WITH LAKE ST., ENABLING TRUCKS TO RECEIVE AND DELIVER DIRECT TO PLATFORM
14 NORTH CLASSIFICATION YARD
15 NORTH RECEIVING YARD
16 NORTH MAKEUP YARD
17 NORTH REPAIR YARD
ARLINGTON ROAD
CHICAGO

Photos Courtesy Chicago North Western

Five-Mile Freight Terminal

At Chicago, railroad hub of the universe, the Chicago & North Western has just spent $16,000,000 on a freight terminal. Most huge freight yards are jointly owned by two or more railroads. Not so this one, which is said to be the largest individually owned freight terminal in the world. It is five miles long and a half-mile wide, has 230 miles of tracks with a capacity of 26,000 cars. About 15,000 cars are handled daily by a force of dispatchers, switchmen, and engineers which works in shifts twenty-four hours a day. There are four miles of pneumatic tubes to carry waybills, "wheel reports," and letters from one yard office to another. The project has been under construction since 1924.

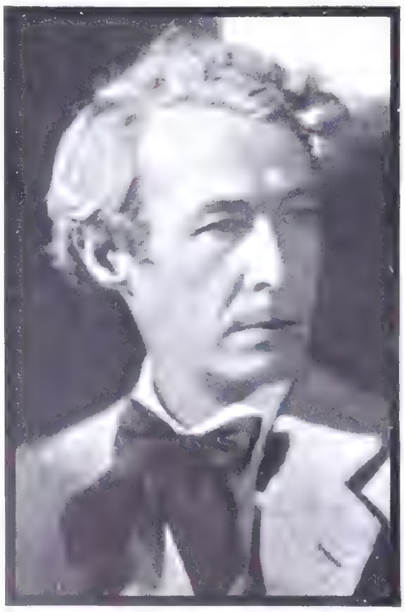
The terminal is located at Proviso, Illinois, a dozen miles west of Chicago's business district. This is where the North Western's main line joins the various belt lines that encircle the city, and is thus a vital point in the railroad's geography. As every one knows, a prime object of traffic men is to route freight *around* big cities rather than *through* them. Therefore freight terminals and classification yards grow up on the outskirts of great cities to separate through freight from local traffic. The Proviso Yards have been built to receive all traffic from the North Western's three main lines radiating out from Chicago, to separate local from through traffic, and to route both on their ways as speedily as possible. It is a great prism that breaks up the flow of traffic into its component parts.

The drawing at the top of the page shows the general layout of the terminal. As in almost every big modern yard, no brakemen ride the cars. Electric car retarders (the inset shows a couple in place along the track) bring each car to a stop in the proper track. Above (right) is the "hump," and (left) a night view of the East Classification Yard. To the left is the interior of the Freight Transfer House, with some of its 4,000 trailer trucks. Its area is twenty-one acres.

Faces of

International

Morris Gest, who lately went bankrupt for the first time in his tempestuous, precarious career, has been discharged of his $600,000 debts. None the less he plans to pay his creditors, who include Otto H. Kahn, Publisher Paul Block, Clarence Mackay ($25,000 each), adverticians Lord & Thomas & Logan ($33,000), Bank of America ($50,000), Chelsea Exchange Bank ($49,000).



Courtesy of the New Movie Magazine

Readers of the *New Movie Magazine*, sold for ten cents in Woolworth stores, were pleasantly thrilled by this handsome picture of old-timer Henry B. Walthall in a recent number. Probably no movie rôle is more fondly remembered than Walthall's Little Colonel in *The Birth of a Nation.* Stimulated by the success of *New Movie Magazine* and its fellows, Kresge and another chain store are getting up their own magazine to appear October 1.

Underwood & Underwood

Senator James Couzens of Michigan, most potent of Ford ex-partners, is one of the wealthiest men in the Senate. Yet he frequently votes with the "radicals." On his fifty-eighth birthday the Senator explained this anomaly by telling a story, a very good story, too. He also threw light on the origin of the Ford $5.00 minimum wage schedule: "I confess there was a time when I was not so keen about the rights and interests of the working man. I recall a winter day in 1914, when, with a stroke of the pen, I ordered the discharge of several thousand workers of the Ford Motor Company, of which I was then general manager. I stood in the office window and saw these men milling about, outside the gates. It was bitterly cold and under these conditions I saw the hose turned on them. I got converted right there. After forty-eight hours of discussion, Henry Ford agreed to a raise of wages from $2.30 a day to $5.00 . . ."

International

When King Feisal of Iraq gave Iraq Petroleum Co. (jointly owned by Standard, Shell, and other big companies) monopoly rights to his country's oil, he looked for some $5,000,000 a year in royalties. But to date Iraq Petroleum has taken out little oil and consequently paid little in royalties. Annoyed, Feisal is said to be considering granting new rights to some more rapidly moving oil company.

International

No longer can Harry Wardman boast that one in every ten Washingtonians is housed by him. "The man who overbuilt Washington" has just lost control of all his major hotels and apartments, including the Wardman Park and Roosevelt hotels. Hotels Management and Securities Corp. takes over the $30,000,000 properties.

Blank-Stoller

Goldman, Sachs man on the board of National Dairy Products Co. is now short, smart Sidney James Weinberg. To be elected to an important directorate is by now as little thrilling to Mr. Weinberg as to win the automobile in the trading game at the annual Bond Club picnic. He has been elected to the one seventeen times, has won the other three times.

Small but strategically located is Chicago Great Western, which sprawls like a starfish between Chicago, the Twin Cities, Omaha, and Kansas City. To it have come changes: in October, 1929, Victor V. Boatner (above), veteran railroader who began as a station helper on the Illinois Central, was elected president, and last spring the Patrick H. Joyce interests gained financial control. Beneficial have been these changes, judging from the fact that Chicago Great Western reports a seven-months net (up to August 1, 1930) of $304,000 as against only $92,000 in 1929.

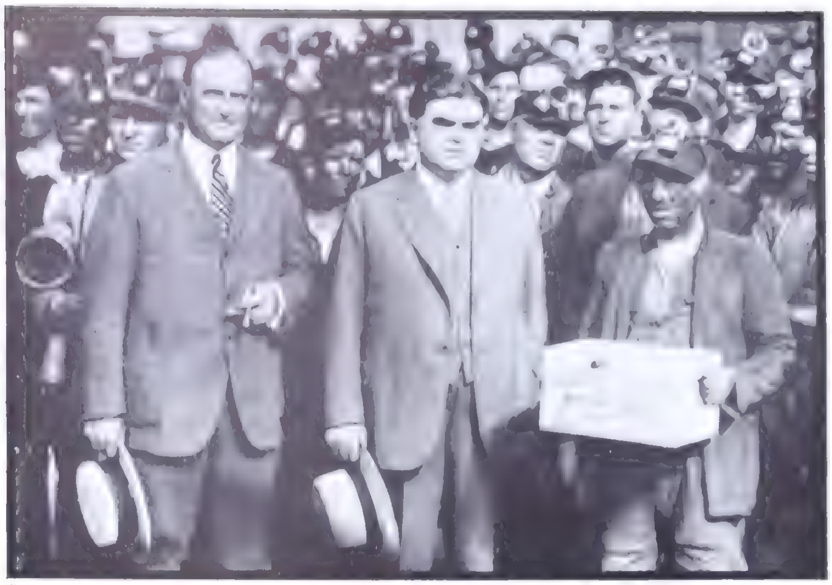
the Month

Underwood & Underwood

With Thomas Hitchcock Jr. as one of the promoters, a new attempt is being made to produce anthracite coal from bituminous—and make money by so doing. Prestcoke Corp. has just put a Chicago plant into quantity production with a low-temperature carbonization process that has been under development since 1925. The process converts one and three-quarters tons of bituminous into one ton of anthracite that undersells real anthracite, is claimed to be as potent.

Underwood & Underwood

Stockholders of New York Steam Corp. were cheered by two items in their company's annual report (for year ended June 30). One was that net was up 50 per cent from last year. The other was a statement by James H. Scarr that, despite the mildness of recent winters, stockholders need fear no definite trend in that direction. Mr. Scarr has been New York's Federal Meteorologist for twenty-one years and has been right 90 per cent of the time. As a boy in Kansas he smelled "twisters" so unerringly that at the word, "Jimmy's running," the whole town made for the cyclone cellars. He has appeared in Manhattan courts around 5,000 times to give evidence as to the weather on a particular day.



P. & A.

On August 31 the contract between the anthracite operators and miners lapsed, but there was no strike. On the contrary a new agreement was signed (to run until April 1, 1936), which both sides hailed as a guarantee of industrial peace. For three hot weeks beforehand a Union Committee had wrangled, bargained, maneuvered with an Operators' Committee in secret session. The man who did most to settle matters amicably was broad-shouldered, forceful Richard F. Grant, president of Lehigh Valley Corp. He is here shown with John L. Lewis, United Mine Workers' president, and some Scranton miners who are offering congratulations. No novice at labor dealings is Mr. Grant. He settled the great anthracite strike of 1925-26 in two sleepless days and nights. He is fair-minded, strong-willed, and knows the strength of the unions—three prime assets.

P. & A.

[illegible]

Mrs. Hoover recently smashed a bottle of water against the bow of a boat named the *Excalibur*. Late in September a sister ship, the *Exochordia* will be launched, to be followed by the *Exeter* and a fourth *Ex* as yet undetermined. The boats which cost some $13,000,000 each and can carry 100 passengers, are for Mediterranean service. The face that launched or will launch these ships is that of the aggressive, hard-working Henry Herbermann (above, right), president of the American Export Lines. He started working at ten as a call boy for the Pennsylvania Railroad. By the time the War broke out he was head of his own trucking and lighterage firm. He made trucking history in 1917 when he hauled a German submarine intact from the Manhattan docks up to Central Park to be used as a rostrum for Liberty Loan speakers. He posted blacksmiths along the route to shoe his forty-eight horse team, which he led personally all the way. He has done well in shipping: his line's export tonnage out of New York is greater than that of any other line. Frank Munson (above, left) expects his famed Munson Line to show a net income for the year ended June 30. This is bullish news for any shipping company in these times and especially so for the Munson Line, which depends greatly on unprosperous Cuban sugar for its cargoes. The withdrawal, by mutual agreement among the competing lines, of much tonnage from the Latin America trade accounts for much of the Munson prosperity.

[illegible]

At the request of worried book publishers, Orion H. Cheney, one-time head of Pacific Bank, is making a trade survey. Among other things, he hopes the various branches of the industry will not continue "to sit in different corners making faces at each other." Genial, adroit, Mr. Cheney may well persuade publishers to come out of their corners.

[illegible]

On page 133 is told the story of these two able Englishmen and their recent achievements. Above is Sir Otto Niemeyer of the Bank of England, who worked out a plan to extricate Australia from her financial troubles. Below is Major Colin Cooper, "this side of forty," who is the personal six-footer force behind Great Britain's latest step towards rationalization: the $57,000,000 merger of some five food ("tea") store chains operating in the British Isles.

P. & A.

International

Winthrop Williams Aldrich, *born on November 2, 1885, at Providence, R. I., now of Roslyn, L. I.*

International

Henry Prather Fletcher, *born on April 10, 1873, at Green Castle, Pa., now of Green Castle, Pa.*

International

Juan Terry Trippe, *born on June 27, 1898, at Seabright, N. J., now of New York City*

Blank Stoller

Harden F. Taylor, *born on July 15, 1890, at West Plains, Mo., now of Scarsdale, N. Y.*

© Keystone

J Leonard Replogle, *born on May 6, 1876, at Enterprise, Pa., now of New York City*

International

Thomas L. Chadbourne, *born on March 21, 1871, at Houghton, Mich., now of New York City*

Underwood & Underwood

Eugene Meyer Jr., *born on October 31, 1875, at Los Angeles, Calif., now of Mount Kisco, N. Y.*

Courtesy Kennedy & Co. N.Y.

George Washington Hill (*date and place of birth unknown*), *now of Irvington-on-Hudson, N. Y.*

Career Milestones

¶ Five months ago, Winthrop Williams Aldrich became president of the world's biggest bank. Last month he became a director of the world's biggest corporation. What all this has to do with the fact that Mr. Aldrich married the daughter of John D. Rockefeller is a moot point. On occasion he has not hesitated to state that he represents the Rockefeller interests, which he forcefully demonstrated by leading the Rockefeller campaign to oust Colonel Stewart from Standard Oil of Indiana. But even Mr. Aldrich's status as Rockefeller legate cannot take precedence over his status as president of Chase National Bank. Hence his election to the board of A. T. & T. means that Chase National Bank has joined Guaranty Trust and First National on the A. T. & T. board as much as it means the first entry of the Rockefeller interests into the company. It also means a slight readjustment of the balance of power between the three major traditions represented on the A. T. & T. board: the New England tradition of family, the Wall Street tradition of finance, and the public service tradition. W. Cameron Forbes, who resigned from A. T. & T. on his recent appointment as Ambassador to Japan, represented the first and third of these. Mr. Aldrich, his successor, obviously represents the second, and, as son of a distinguished Senator from Rhode Island, also is included in the first.

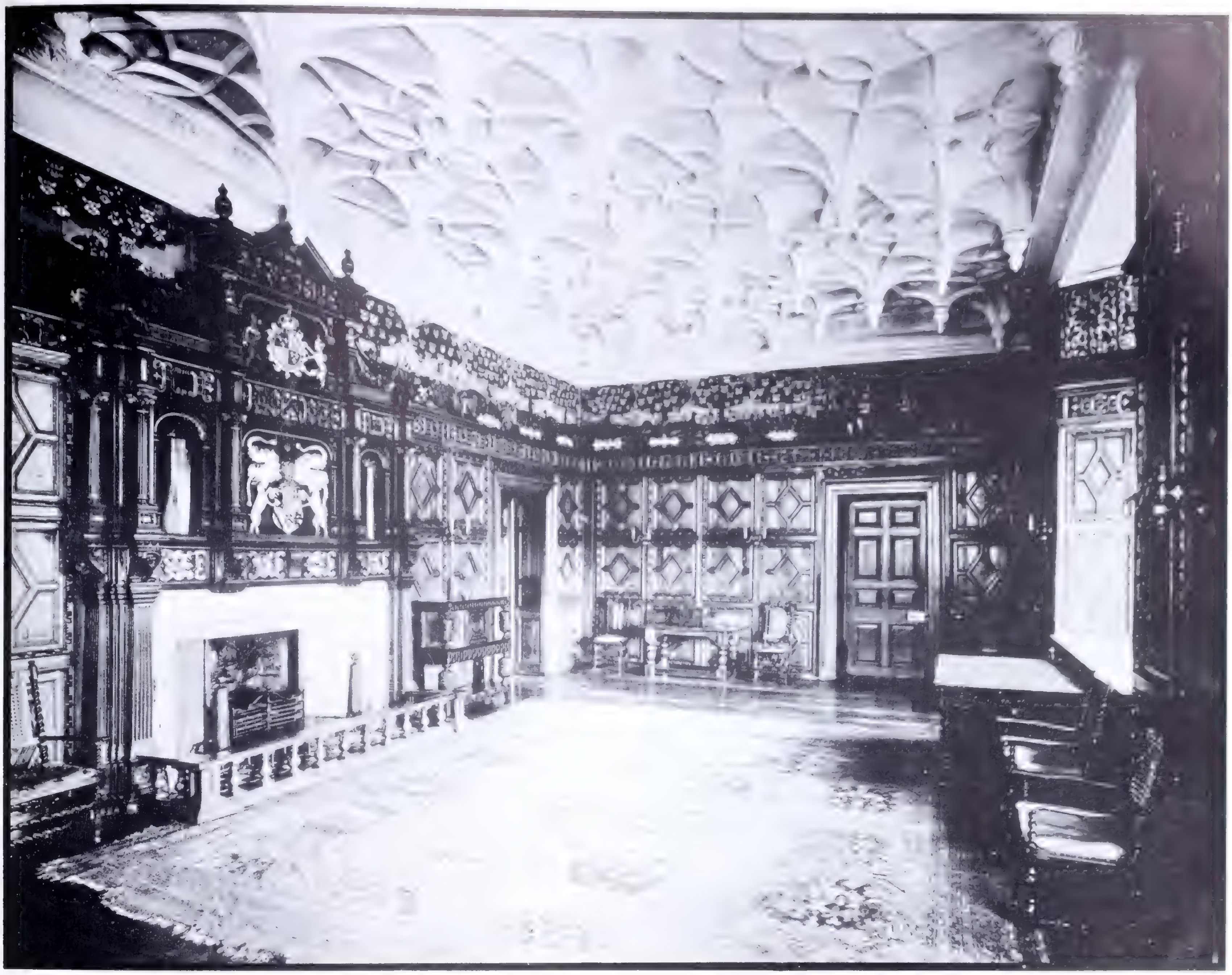
¶ A milestone in the career of a "career man" was the appointment by President Hoover of Henry Prather Fletcher to the chairmanship of the Tariff Commission. Entering the diplomatic service as a secretary to the U. S. Legation at Cuba, he left it somewhat over a year ago as Ambassador to Italy. In the interim he had successfully met so many extraordinary diplomatic exigencies (including the conducting of President Hoover's South American tour) that he is called "The Handy Man of the White House." Certainly the President never needed the ability and diplomacy of his Handy Man more than as head of the Tariff Commission. Mr. Fletcher's background seems ideally balanced for the job. He is both internationally minded and a Pennsylvania Republican.

¶ Juan Terry Trippe is as quiet and unassuming as his friend, Charles Augustus Lindbergh. He is also as tall, in industry fully as potent. Since he was graduated from Yale Sheff in 1920, he has been lacing air lines around and across the Western Hemisphere. In 1923 it was Long Island Airways. By 1926, he had taken in New England with Colonial Air Transport. In 1927 he and his associates formed Pan-American Airways and took a giant stride towards what is today almost their private domain South America. The stride was a line from Key West to Havana. By 1929 Pan-American lines ran down the west coast of South America as far as Santiago, Chile, down the east coast only to the Guianas. Mr Trippe and his associates have remedied this lack of balance and incidentally bought out their only serious competitor in South American air travel by acquiring the assets of NYRBA (New York, Rio & Buenos Aires Lines). This makes thirty-two year old Mr. Trippe head of the world's biggest air line, whose planes fly over 100,000 miles every week

¶ The Atlantic Coast Fisheries have just elected as president the Man Who Knows Most about Fish. A scientist before he was a man of business, he was first interested in fish then in profits, which may be why he has been able to bring Atlantic Coast Fisheries up from a moribund state to rank with giants like Genera Seafoods and Booth Fisheries. He began his career by studying molluscs and he says that he would like to spend the rest of his life studying diatoms, which are a species of algae much in demand by hungry fish. He is a chemist as well as an ichthyologist. In working out (with A. H Cooke) his process for freezing fish in forty minutes, he drew on both these funds of knowledge. It is this quick-freezing process that more than anything else has set Atlantic Coast Fisheries so firmly on its feet again The name of this small, sandy-haired, enthusiastic ichthyologist is Harden F. Taylor. In his time he has been burdened with such titles as Chief Technologist of U. S. Bureau of Fisheries and Assistant for Developing Fisheries and Saving and Use of Fishery Products. But he prefers talking about the fish and chemicals that are in the sea, which he does in a most engaging manner, to dwelling on his titles and achievements, past or present.

¶ Sick British steel and sicker Cuban sugar have both called in American doctors. The doctor at steel's bedside is the colorful J. Leonard

[*Continued on page 140*]

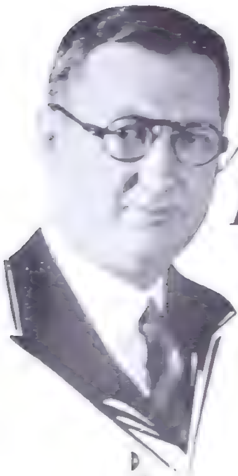


Hearst Buys More Art, Pleases Britishers

WHEN an American buys a noted example of British art and transports it to America, he is heartily damned by the English press and public. But when an American buys British art and keeps it in England, he is blessed with equal heartiness. These axioms were amusingly illustrated in the recent sale of the Great Chamber of Gilling Castle (above), which contains a great deal of exceptionally fine Elizabethan paneling and stained glass. Efforts to sell it at Christie's having come to naught, the press at last announced sadly that it was to be dismantled and packed off to America. Typical headlines were: "Castle Masterpiece for U. S. A." and "Off to the States." Then, when gloom was at its deepest, came an amazing report: William Randolph Hearst had bought the room and was going to install it in his Welsh estate, St. Donat's Castle. At once, the press burst into a pæan of thanksgiving, the burden of which was the headline: "Saved from the U. S." It was possibly the only time on record that the English press has wholeheartedly praised Mr. Hearst.

It was Sir William Fairfax who decorated the Great Chamber in 1585. Heraldry seems to have been his hobby: not only are his own arms emblazoned in full colors over the fireplace, but the Royal arms of Elizabeth are put over them (though somewhat smaller), and on the room's broad freize are painted 450 shields displaying the arms of the gentry of Yorkshire.

St. Donat's Castle, where the room will be installed, is fast becoming the principal storehouse for the amazing hodge-podge of valuable impedimenta with which Mr. Hearst delights to surround himself. He plans to fill the grim old fortress with the pick of his English antiques: the Sparkford Room from Hazelgrove House, some panels from Albyns, woodwork from Heronden Hall, the famed Bradenstake barn, some windows from St. Albans, Henry VIII gold shoes, some old silver from the famed Barnet Lewis Collection, and so on. Varied though it is, this list is quite monotonous compared to the full roster of the Hearst acquisitions. With a magpie-like lust for possession, Mr. Hearst has collected thousands on thousands of miscellaneous antiques. He has two magnificent mummies that are unrivaled even by the British Museum. He has 17th century Spanish royal tapestries. He has 13th century choir books. He has Renaissance carved tables. He has 15th century Italian choir stalls. He has 7th century ceiling frescoes (now in the tower suite at his Californian ranch). He has a whole series of English Henry VII beds. He has—but the list is endless. Only in the depths of Mr. Hearst's own memory are his possessions fully catalogued. There, one may be sure, King Henry's shoes are as meticulously recorded as the Veronese church which Mr. Hearst had taken apart for shipment in 1926. The Great Chamber is thus the most recent arrival in an already crowded seraglio of antiques.



A Personal Invitation to Hotel Hollenden

THE Hotel Hollenden is ideally located for the convenience of the visitor whether he is in Cleveland on business or pleasure. Within a block or two of the Hollenden will be found the leaders in practically every activity of the city. Just a block or two away are the theatres, the shopping centers, the banks, the Public Auditorium and the principal office buildings. Located right in the heart of things, the Hollenden has for decades served the requirements of the most discriminating visitors. Anything that is required of a good hotel may be found at the Hollenden. You are cordially invited to make the Hollenden your home when you are away from home. The Crystal Dining Room and the Hollenden Coffee Shop offer a variety of good eating places.

In Cleveland—its The
HOLLENDEN

CENTRAL Pays its Losses *Promptly*

WHEN you suffer loss, you are vitally concerned about three things—how good is your insurance; how fairly will the loss be adjusted; how promptly will you get your check.

CENTRAL—invariably—mails loss check the same day proof of loss is received. CENTRAL'S reputation guarantees fair adjustments and quality of protection is unquestioned. CENTRAL'S dividend (30% since 1921) also means a substantial saving in cost.

CHECKS MAILED SAME DAY PROOF OF LOSS RECEIVED

CENTRAL
MANUFACTURERS MUTUAL INSURANCE COMPANY
C. A. L. PURMORT, *President* *Home Office:* VAN WERT, OHIO

Fire, Automobile and Tornado Insurance for Select Risks

Career Milestones

[*Continued from page 138*]

Replogle. He it was who sold Cambria Steel to Midvale Steel and who organized the very profitable Vanadium Corp. As director of Steel Supply during the War he revolutionized the lingerie of American women by cutting down on the corset makers' steel allowance. After the War he organized Replogle Steel Co., made a fortune when its stock went from 30 to 93 and lost it in the market crash of 1920 when it fell back to 30. His friend, Charlie Schwab, likes to tell how a stick-up man once blackjacked Replogle and, finding on him nothing except a 1,000-share certificate of Replogle Steel stock and a package of cigarettes, took the latter. Mr. Replogle, now retired, lives well, spending six months of the year in Palm Beach and most of the remainder in Europe. While Mr. Replogle lay ill abroad last year, a group of British steel-makers asked him to draft a plan for the reorganization of the industry. Bored with lying idle in bed, he did so. His plan has just been made public. Its first remark is: "Practically all English blast furnaces are obsolete and should be scrapped . . ." and the rest of the report is equally to the point. Even primogeniture, almost as sacred among British steel-owners as among British land-owners, is blamed as "one of the principal reasons" for the industry's poor health . . . The Cuban sugar industry has called in as a sort of a doctor-dictator a six-foot six American lawyer: ruddy-complexioned, impressive Thomas L. Chadbourne, senior partner of the potent firm of Chadbourne, Stanchfield & Levy. Like Doctor Replogle, Doctor Chadbourne lives well. He takes long cruises on his 175-foot yacht, pungently named *Jezebel*. He spends most of his time abroad (his summer home is a château in France) or in the South, coming to New York only when he must. In the present instance, he is glad to come, for like most big men, Mr. Chadbourne likes big jobs. He has certainly never had a bigger. Should he succeed in guiding to a satisfactory solution the sugar growers who have been meeting in his law office, Mr. Chadbourne will be more elated, his prestige will be greater than even after his last year's victory over Sir Hugo Hirst of British General Electric.

❨ To succeed Roy A. Young as governor of the Federal Reserve Board, President Hoover has chosen a versatile and extremely able public servant: Eugene Meyer Jr. Up to thirteen years ago Mr. Meyer had his own private banking house, and a highly successful enterprise it was. If there is one thing Mr. Meyer shines at more than another, which by the way is a doubtful hypothesis, it is the investing of money. A member of a wealthy French family, he started out with a sizable fortune which he has since doubled and redoubled many times. He picked U. S. Steel as a good buy many years before the War boom and reaped a goodly reward for his judgment. Like many another potent man of business, he went into governmental service during the War, but unlike most other business men, he did not return to his private potato patch after the War. Instead he shut up his bank, retired from all his directorships and has served his country since then as director of the War Finance Corp. and as Farm Loan Commissioner. He knows a great deal about a great many subjects from farming and non-ferrous metals to Chinese art. His new appointment may justly be considered the climax of his public career. It means that Secretary Mellon, ex-officio chairman of the Federal Reserve Board, will work smoothly with Governor Meyer, who happens to be his old and intimate friend. And it means, more than anything else, that Wall Street's influence on the Board will be increased.

❨ With the year three-quarters over it is plain that American Tobacco Company's 1930 net will top $40,000,000, which is about $10,000,000 more than the entire Tobacco Trust made in 1911, the year before it was dissolved. This is a spectacular milestone in a spectacular career: that of hard-fighting, iconoclastic George Washington Hill, president of American Tobacco. Last year he almost broke the 1911 record, falling short by a scant $500,000. The etching shown here is the only picture he will release for publication. It shows the alert expression that is characteristic of him and the battered old felt hat that perches on his head during most of his waking hours. Aggressively, Mr. Hill has carried out his own ideas about advertising, has made the public buy his Cremo cigars and Lucky Strikes in spite of better-bred competition, indignant candy interests, and the Federal Trade Commission. He confounds his critics not with words but with results: a $350,000,000 increase in Lucky Strike sales for the first seven months of the year is one of them.

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THE MATCHLESS BEAUTY of Rock of Ages granite is as imperishable as the faith and ideals which a memorial should proclaim.

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By selecting Rock of Ages granite, you eliminate all speculation as to the beauty and character of the finished memorial. The Rock of Ages certificate of perfection, which your memorial craftsman will unhesitatingly give you, is an uncompromising guarantee, not only of the material, but of Rock of Ages craftsmanship as well.

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ROCK OF AGES

THE *DISTINCTIVE* BARRE GRANITE

ROCK OF AGES CORPORATION . . . BARRE, VERMONT

A *great* motion picture company *enters the* INDUSTRIAL FIELD

Warner Bros. lead the field in entertainment pictures. With one bold stride they have now advanced to the forefront of the commercial field.

You now can have an industrial motion picture made by the company that brought the Talking Picture to the world.

Their industrial and commercial department offers you:

Advertising minds to originate the basic sales idea you want to convey, or to work with your agency or advertising department in developing an already determined idea.

Experienced scenario writers to prepare the story for screening.

Technical experts in photography, sound, lighting, and direction to make the picture.

World wide distribution outlets with a guaranteed total circulation of 5,000,000 to present the picture in any territory, to any group you wish to reach.

You can show the manufacturing processes that go into your product, present new selling ideas to your salesmen or dealers, or bring home to your prospects a living picture of your company and what it means.

Or, by the use of a sponsored picture, you can advertise directly to an audience of 5,000,000 people who attend the best moving picture theatres. They cannot miss your advertisement when it is shown on the screen.

The cost of this service is less than you think. Write for illustrated book describing the possibilities of the industrial pictures.

WARNER BROS. can give you:

Sound Pictures with sound recorded as picture is taken.

Sound Accompaniment Pictures with sound added after the film is made, permitting sound effects, lecture or musical accompaniment.

Silent Pictures with explanatory titles.

Portable Projectors for sales meetings and conventions.

Point-of-Sale Presentations by means of specially equipped auto-trucks. These trucks with self-contained apparatus can present sound pictures on a five by seven foot screen in the open air on street or highway right where you want your advertising to strike home!

What Warner has done for these famous stars, Warner can do for your product with an Industrial Motion Picture.

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220 West 42nd St., New York City

Please send illustrated book and full details on Industrial Picture making.

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F10

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A SUBSIDIARY OF WARNER BROS. PICTURES, INC.

220 West 42nd Street
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Branches in 26 Cities in the United States and throughout the World

WHAT WARNER BROS. PROMISE WARNER BROS. DELIVER

This Month's Issue

is reviewed from the stock market angle

by Carlton A. Shively

FOOD for sociological mastication can be found in the action of the "amusement" stocks since the dark days of last October - November. In the scramble for stocks in "depression proof" industries by those who still had a little money, the motion picture shares were bought right and left. On some days the group made up nearly 25 per cent of the trading. They led the spring rise and were only moderately depressed in the mid summer setback. However, the suspicion that even picture theatres had weaknesses finally took hold.

While the enthusiasm was at its height early in the year, most of the picture theatre stocks sold higher than they did in 1929, a feat performed this year by very few stocks. Warner Brothers was one, reaching $80.25 a share, or $15.75 above the best price of last year. Paramount topped last year's best by two points or so. RKO scored with a five point margin; Loew's made it ten points. Fox, of course, which had a bad case of internal disorder and which had been tremendously inflated last year, enjoyed one of the fanciest short interests in the market. They have been pretty well covered since the new management has taken hold, and Fox has kept well up with the leaders of its group.

Since the Fox upset early in the year, trouble has developed in Warner Brothers. The heavy selling which preceded application of a stockholder for receivership last August has been replaced by a saner attitude toward the stock. At the same time it has not acted much as stocks usually do which are associated with the name of John J. Raskob, who is known to have taken an interest in the company about a year ago. Nor is quite so much prestige derived from the company's banking connections, Goldman, Sachs, as once was the case.

Warner Brothers never has had the clever pool management often given RKO on the floor of the Stock Exchange by M. J. Meehan. Mr. Meehan's natural affinity for Radio Corporation, which broadcast his name to the world two years ago, got him interested in Radio's subsidiary, RKO. It didn't reach the price of $75 a share talked for it a few months ago, but it ought to be a winner in the 1931 bull market stakes.

• • •

Perhaps no better illustration of the mutability of stock market fashions can be had than the career of the two sulphur stocks: Texas Gulf and Freeport Texas. Years ago the now virtually defunct Union Sulphur had almost a monopoly of the sulphur business. Its shares reached such heights that they were only for the rich. About the time Union's deposits began to play out Texas Gulf and Freeport came on the scene. Memories of the huge earnings and high prices for Union encouraged speculation in the newcomers. In their heyday on the Stock Exchange, 1926-29, they were the darlings of pool operators and the small trading public. No matter how quiet things might be, it was always possible to hear tips on the sulphur stocks. Some neat little fortunes were made in them.

Both companies had the principal requisites of "trading" stocks. They had the proper banking connections, large stockholders who were willing to turn a hand to stock market operations now and then, the mystery and speculative attraction which always seems to cling to mining stocks, they sold in popular price ranges and their shares outstanding were neither too numerous to be unwieldy nor too scarce to make pool operations difficult or short selling too hazardous. Through its directorate Texas Gulf was and still is associated with Morgans. Freeport was controlled by National City Bank officials, although recently an outside group grasped the reins.

In the market break last autumn Freeport sank to twenty-three and three-quarters, losing about 50 per cent in value. It has recovered 100 per cent from the low price, and is selling about midway between the best and worst of the year.

Recently Freeport has been more active than Texas Gulf, the latter also selling half way between the high and the low of the year, yielding a little better than six and one-half per cent. It fared no better than Freeport in the big break, but recently it has been steadier. Newmont Mining Corporation, the holding company formed a few years ago to take over the major portion of the late William Boyce Thompson's mining investments, is known to have a good deal of Texas Gulf stock and a very close association with the management. The two have a new scheme for sulphur which will remove all worries, for Texas Gulf, over exhaustion of present sulphur reserves. This new development, unknown as yet to Wall Street generally, is just the sort of raw material from which bull markets are confectioned.

EXECUTIVES WHO ASK QUESTIONS

Some executives hesitate to ask questions. This advertisement is a suggestion for executives who insist on knowing why. ¶ If in your industry, as in most, finishing materials are applied to protect or beautify products that you make or use, ask those responsible whether the finish is nitrocellulose lacquer. If it is not, ask why. *Be satisfied only with reasons based on recent tests.* Nitrocellulose lacquers of today are profitably used in many new and original applications. ¶ Consult the research department of a lacquer manufacturer, and you will be aided in securing the advantages of nitrocellulose lacquer. If existing lacquers do not meet your requirements they may be able to develop a new one for your needs. We will gladly send you a booklet, "The Story of Modern Lacquer," which contains information you should have.

CELLULOSE PRODUCTS DEPT.

HERCULES POWDER COMPANY

(INCORPORATED)

975 King Street, Wilmington, Delaware

Nitrocellulose — Explosives

Cotton Linters — Naval Stores

All American Steel Filing Cabinets

A Standardized Product of BROWNE-MORSE COMPANY

MUSKEGON MICHIGAN

John Hancock Series

BUSINESS CREDIT

IF the mainspring of a business is the brains and driving force of some man, there is no surer, quicker way to strengthen the credit position of that firm than by taking adequate Business Insurance on his life.

This matter needs careful consideration. May we, without obligating you in any way, provide some general information on this subject?

Address:

........INQUIRY BUREAU

John Hancock

MUTUAL

LIFE INSURANCE COMPANY

OF BOSTON, MASSACHUSETTS

197 Clarendon St. Boston, Mass.

Please send information regarding Business Credit.

Name..........................

Address........................

....

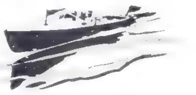
Fr.

Over Sixty-Seven Years in Business

GRAND RAPIDS

back to the job

TANNED, invigorated, our tourist guests have gone. We've had a good time with them, here in the nation's playground. Now, back to work! Yes, after hours we drive to Lake Michigan for a dip . . . there are lakes even nearer where the bass hit hard these autumn evenings . . . two dozen golf courses 30 minutes from town. This Michigan outdoors builds pep for the day's job. The boys in the factory get their fun, too, and punch the clock o' mornings with a grin that means production!



WHAT ELSE
MAY WE TELL YOU?

If you wish to know other advantages Grand Rapids offers industry, this bank . . . counselor to successful businesses for 77 years . . . will gladly discuss wage scales, traffic rates, factory sites.

OLD KENT
BANK

West Michigan's Largest

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October, 1930

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"Fortify for Fire Fighting"
FIRE
5 GAL PUMP TYPE NON FREEZING
FOR FIRE
SODA & ACID TYPE
FOAM TYPE
FAMOUS SINCE 1907 NON FREEZING
Pyrene
FIRE EQUIPMENT FOR EVERY HAZARD
Pyrene Manufacturing Company
NEWARK NEW JERSEY
ATLANTA KANSAS CITY CHICAGO SAN FRANCISCO

Milo Jones Born 1809

JONES
DAIRY FARM
SAUSAGE

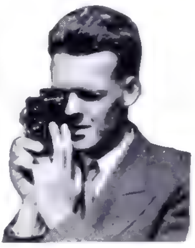
When Milo Jones established the Jones Dairy Farm in 1834 he laid the foundations of a business which is famous all over America for the production of a NATIONAL BREAKFAST AND LUNCHEON DELICACY unique in the annals of Food Products.

Made today just as Milo and "Aunt Sally" Jones made it nearly 100 years ago.

JONES DAIRY FARM
Fort Atkinson, Wis.

In Wisconsin's great dairy center—owned and operated by the Jones Family since 1834.

100 MEMO PICTURES with $1 worth of film



CARRY A MEMO Camera in your pocket — surest, quickest, most convenient still film camera in the world. 50 pictures with one 50-cent daylight-loading Agfa film. Easiest to load. Twick of the thumb advances the film. Spyglass finder locates subject instantly right side up. Memo gets everything on a trip. Wonderful for close-up portraits as well as landscapes. F 6.3 and F 3.5 anastigmat lenses.

Memo pictures are printed on paper exact size, as enlargements, and as projection rolls for a picture show with Memoscope. The new idea in still cameras for greater economy, convenience, utility. Memo $20. Focusing models to $40. For sale by camera dealers. Many thousands of enthusiastic owners. Interesting literature gives full details.

AGFA ANSCO OF BINGHAMTON, N. Y.
Please send me free 56 page Memo handbook
Name____________________
Address__________________ 22

℞ *Simonds Steel* compounded carefully as a Prescription - -

. . . *insures the* Quality
and Uniformity *of*
Simonds Cutting Edges

o PRESCRIPTION is compounded with ore scientific accuracy than the alloy and her special tool steels used for Simonds tting edges.

The Simonds steel mill . . . one of the orld's most completely equipped electric rnace plants . . . is maintained for the purose of making steels of uniform high ıality for Simonds products. No steel is ɔod enough for Simonds cutting edges ıtil engineers have given their expert pproval . . . until every test indicates that the eel measures up to exacting Simonds standds for toughness, strength and hardness. monds steel is "prescription" steel—the nest, most practical tool steel modern ethods and improved facilities can produce.

This is the basic reason why Simonds ws, machine knives, Red Streak hack saws d other quality products retain their sharp tting edges on the very toughest cutting bs . . . this is the reason why the Simonds ame means perfection wherever superior tting equipment is used.

SIMONDS SAW AND STEEL COMPANY
ESTABLISHED 1832 · · FITCHBURG, MASSACHUSETTS

Boston . . Mass.
Memphis . Tenn.
Seattle . . Wash.
Chicago . . Ill.
Detroit . . Mich.
Portland . Ore.
New York . N.Y.
New Orleans . La.
Atlanta . . . Ga.
San Francisco . Cal.
Los Angeles . Cal.

Producers of Circular, Band, Metal, Cross-Cut, Gang and Drag Saws . . . Machine Knives . . . Files . . . Hack Saw Blades . . . Tool Holder Bits . . . Saw Tools . . . Discs . . . Steel.

SIMONDS CANADA SAW COMPANY, LTD., Montreal, Que., St. John, N. B., Toronto, Ont., Vancouver, B. C.

AFFILIATED COMPANIES

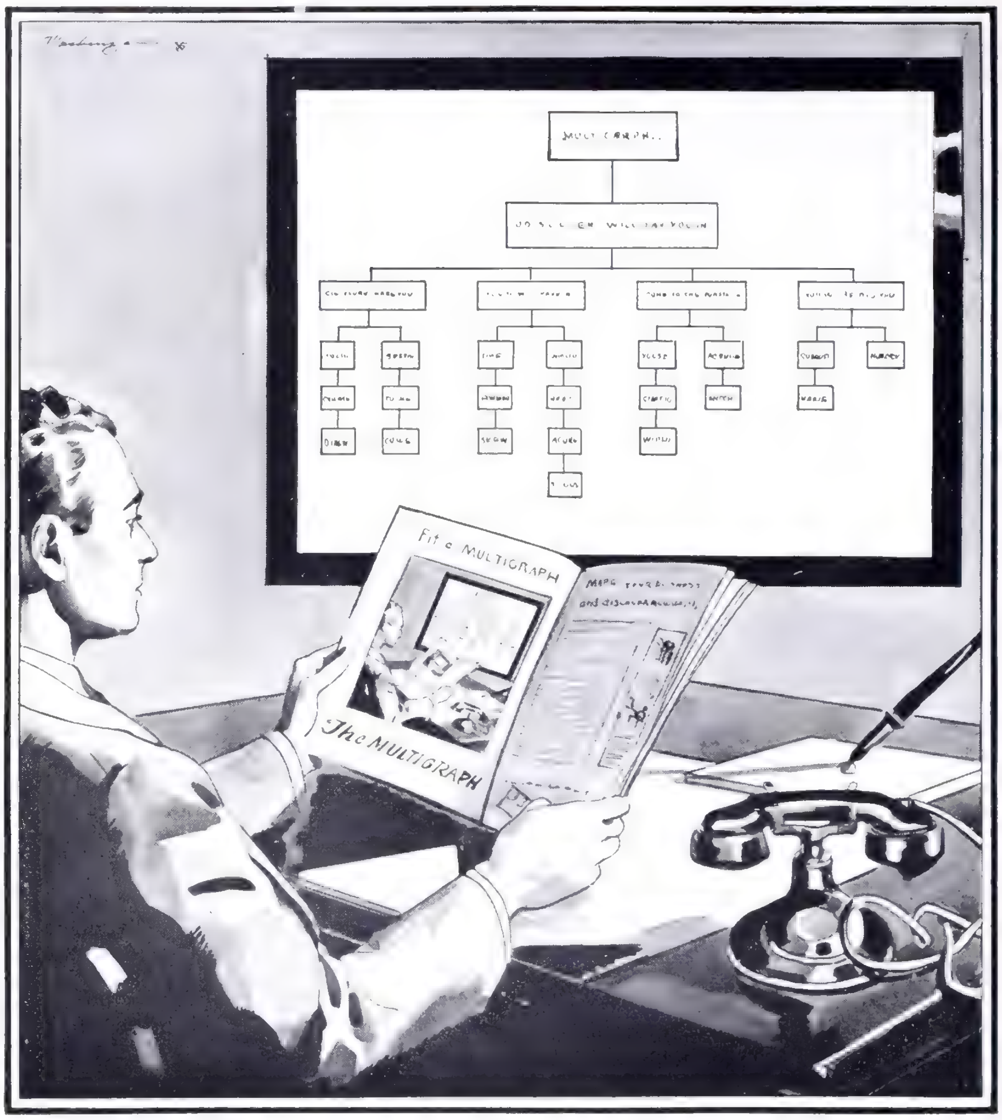
WAPPAT, INC., Pittsburgh, Pa., *Manufacturers of Portable Electric Saws and Tools* ~ THE ABRASIVES CO., Phila., Pa., *Producers of Abrasive Grinding Wheels and Polishing Grain* ~ SIMONDS GUARANTEED CUTTER-HEAD CO., Seattle, Wash., *Manufacturers of Guaranteed Cutter-Heads.*

SIMONDS INDUSTRIES
World's Largest Saw Makers

ACK OF THE EDGE . . THE STEEL . . . BACK OF BOTH . . SIMONDS

Fit a MULTIGRAPH MAP to your business

and discover new ways to save



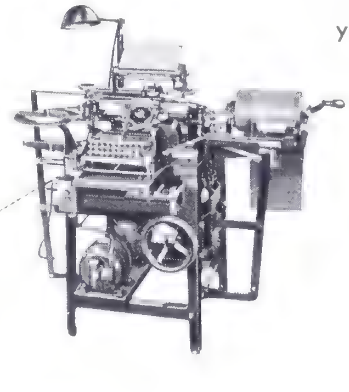
USING the Multigraph is one thing . . . and using it for all it's worth is something else. Many an organization which makes the Multigraph pay for itself each year as a direct mail unit neglects the opportunity for similar profit by using the Multigraph to print office forms. Others, who use the Multigraph for printing, could greatly enlarge the effectiveness of sales and advertising appropriations and other department budgets by applying the Multigraph to selective selling, follow-up, collections, production records, or similar problems.

That's why we recommend to every executive a searching check-up of the Multigraph map of business—the map of places in which the Multigraph can serve you. Take your own organization chart; go over it section by section; list forms that could be printed on the Multigraph. It won't be unusual if you find the way to save enough to pay at least one clerk's salary . . . and it is not unprecedented to find savings that run into five figures.

Whether or not you now use Multigraph equipment, it will be worth your while to obtain the new bulletin-guide to Multigraph applications—"33 Ways in Which Money is Being Made or Saved by Multigraph Equipment." You can get it from the Multigraph representative listed in your telephone book. Or we will send it direct.

THE AMERICAN MULTIGRAPH SALES COMPANY
1834 East 40th Street; Cleveland, Ohio
THE MULTIGRAPH SALES COMPANY, LIMITED
137 Wellington Street, W., Toronto, Ontario

The American Multigraph Sales Co.
1834 East 40th St., Cleveland, O.
Please mail copy of "33 Ways" to:
Name ____________
Business ____________
Address ____________
City ____________ State ____________



The Multigraph Compotype, either in your own office or through the service made available by Multigraph district offices, gives you the advantage of convenience and economy assured by the embossed strip method of composition for letters and address plates.

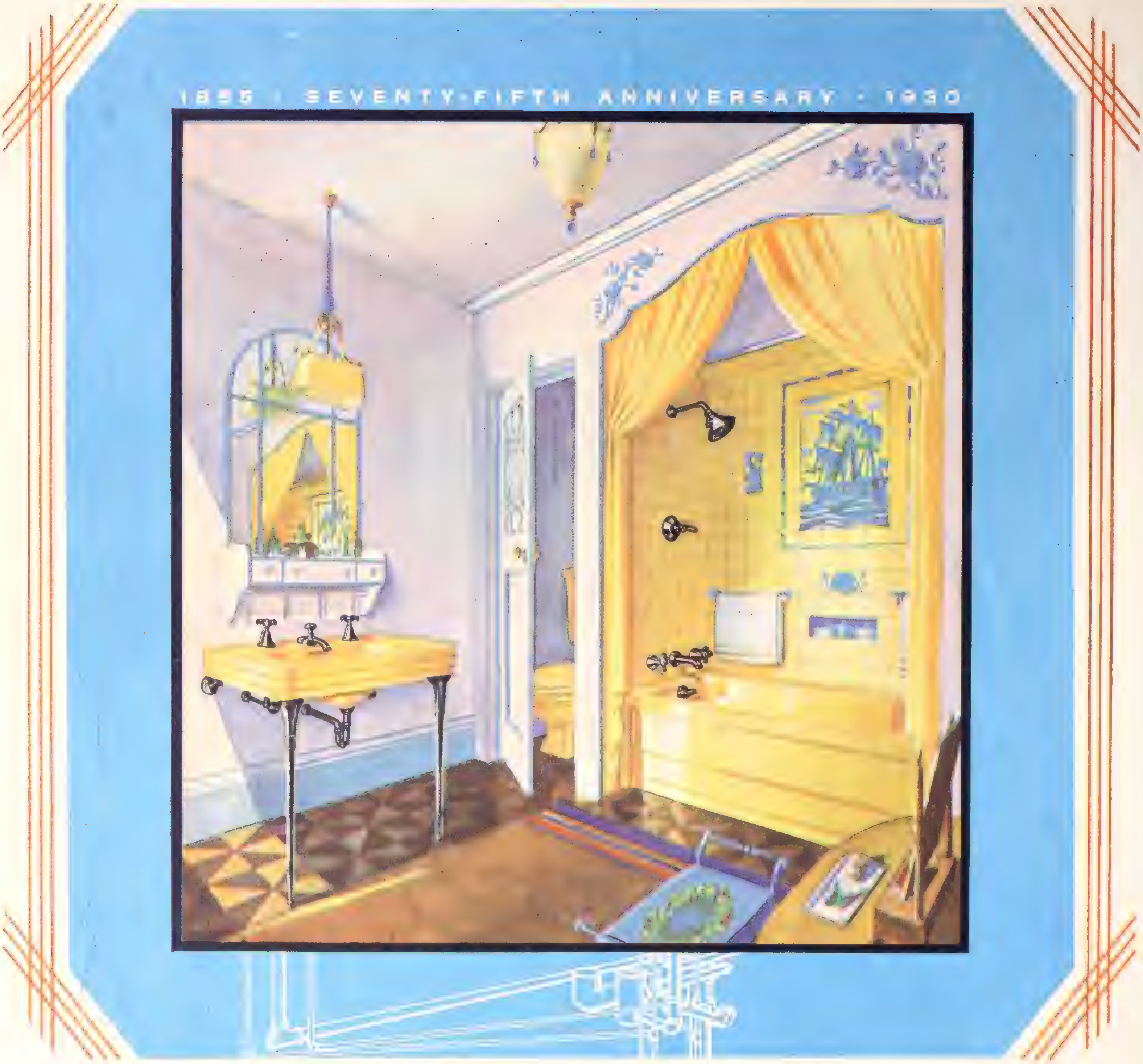
The MULTIGRAPH

JUN 22

Fortune

e Dollar a Copy NOVEMBER 1930 Ten Dollars a Year

LINGAME
PUBLIC



Wherever beauty is deemed worth seeking

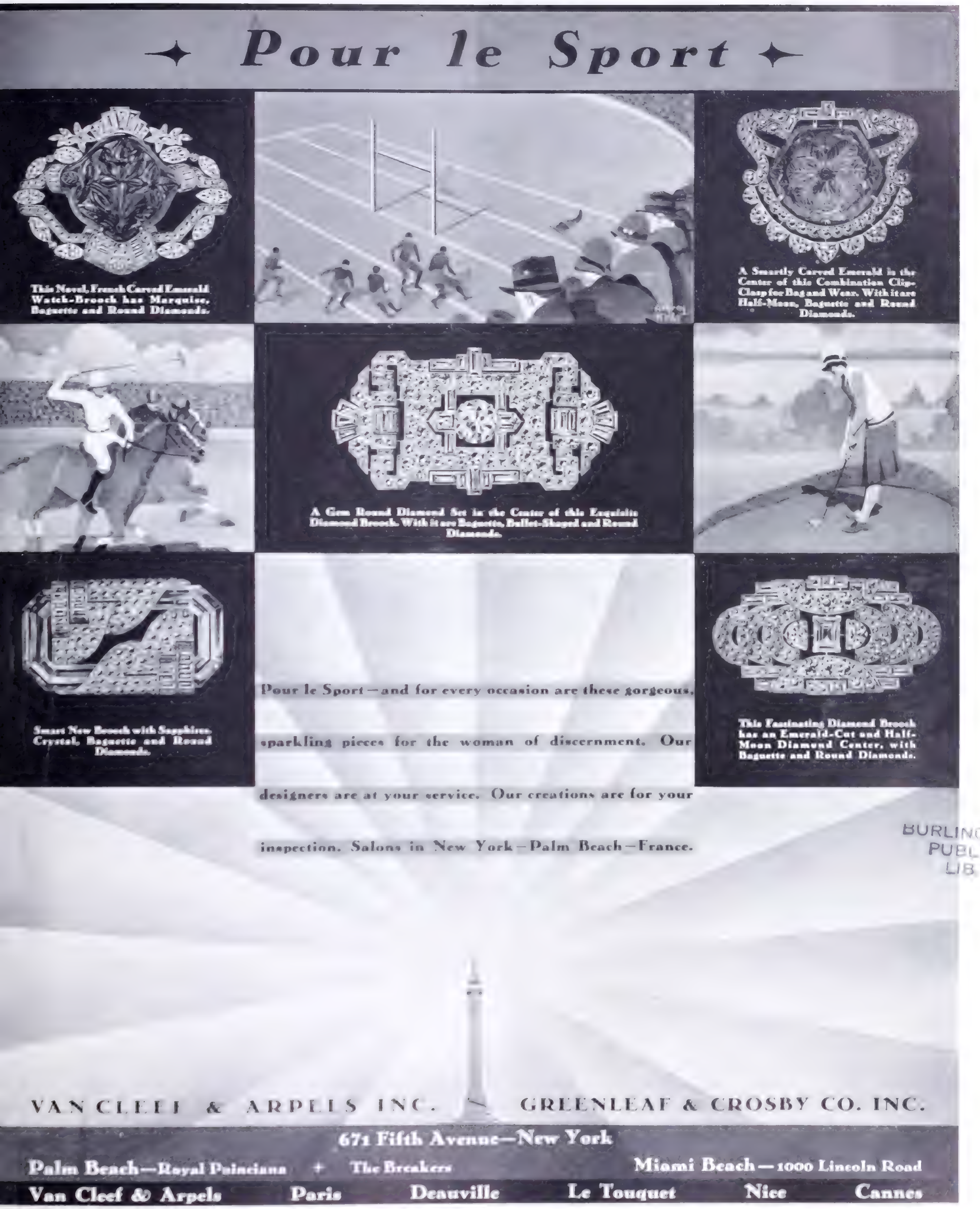
Women who love beauty in their surroundings and cultivate it in themselves are always enthusiastic about Crane bathrooms. To this temple of health and charm, Crane ideas have brought a beauty of decoration and design worthy of the purpose. From a purely practical standpoint, Crane plumbing is no less desirable. In town house or suburban cottage, it adds value far past its cost, saves many dollars in upkeep, puts off by years the time when obsolescence endangers the whole investment. Ask your architect. Buy from a Crane Qualified Contractor-Dealer, always a highly skilled master plumber or heating contractor. For a view of all new plumbing possibilities, write for the book, *Homes of Comfort.*

Valves **CRANE** *Fittings*

FIXTURES, VALVES, FITTINGS, AND PIPING, FOR DOMESTIC AND INDUSTRIAL USE

Crane Co., General Offices: 836 S. Michigan Ave., Chicago ✦ 23 W. 44th St., New York ✦ Branches and sales offices in one hundred and ninety-six cities

Nov 25



Pour le Sport

This Novel, French Carved Emerald Watch-Brooch has Marquise, Baguette and Round Diamonds.

A Smartly Carved Emerald is the Center of this Combination Clip-Clasp for Bag and Wear. With it are Half-Moon, Baguette and Round Diamonds.

A Gem Round Diamond Set in the Center of this Exquisite Diamond Brooch. With it are Baguette, Bullet-Shaped and Round Diamonds.

Smart New Brooch with Sapphires, Crystal, Baguette and Round Diamonds.

This Fascinating Diamond Brooch has an Emerald-Cut and Half-Moon Diamond Center, with Baguette and Round Diamonds.

Pour le Sport—and for every occasion are these gorgeous, sparkling pieces for the woman of discernment. Our designers are at your service. Our creations are for your inspection. Salons in New York—Palm Beach—France.

VAN CLEEF & ARPELS INC. GREENLEAF & CROSBY CO. INC.

671 Fifth Avenue—New York

Palm Beach—Royal Poinciana + The Breakers **Miami Beach—1000 Lincoln Road**

Van Cleef & Arpels Paris Deauville Le Touquet Nice Cannes

BURLINGAME
PUBLIC
LIB.

The Christmas Gift *of* Jewels

For the Christmas Season we present a collection of Precious Stone Jewelry which represents originations of our own designers and those of our associated company Black, Starr, Frost-Gorham, Inc., of Fifth Avenue, New York.

SPAULDING-GORHAM, INC.

MICHIGAN AVENUE *at* VAN BUREN STREET, CHICAGO

Associated Stores in New York, Atlanta, Palm Beach, Evanston, Southampton, Paris

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Vol. 2
No. 5

Fascinating SAN FRANCISCO

BURLINGAME
PUBLIC
LIB.

THERE is a city in the West, on the Pacific shore, that is like no her city in the world.

Built high on hills that overlook e water on three sides, built well id beautifully by men whose faith is had time's vindication, San Francisco is truly a modern inspiration.

The tremendous de- elopment of the region iat it centers comes gically. Here are nat- ral resources almost ithout end, in sum and variety. And here is ie opportunity to real- *live*, while expanding isiness opportunities e made to pay for life. here is no more to ask.

Almost precisely in the center of far Western population, San Francisco is its great headquarters city. Here are the leading financial, manufacturing, railroad, shipping and distributing interests of this West. If you would cultivate the fastest growing market in America, and the richest for its size, you will study it from San Francisco.

And if the nearly-billion-population market of the Pan Pacific lands is something you are thinking of, don't overlook the fact that the Bay of San Francisco is its well established gateway . . .

This winter offers you the opportunity for a quick survey. When cold and snow descend on other parts, California is warm and sunny, San Francisco in her prime. Mark this region for your winter holiday. Play golf above the Golden Gate. Test Pebble Beach and debonair Del Monte. Grassy greens and bridle paths are all around . . . The social season's in full swing. You'll thrill to the brilliant days and the nights that combine the best of all the other famous cities that you know.

Choose San Francisco for your winter get-away; investigate the future for your business here.

Write Californians Inc., Dept. 2211, 703 Market St., San Francisco, for the free, illustrated books: "Why Manufacturers Choose San Francisco" and "San Francisco — in California Where Life Is Better." You will incur no obligation whatever.

Alfred Nelson Co

580 FIFTH AVE. N. W. Corner 47th Street NEW YORK

***We are noted* for making the finest strictly custom made to individual measure sack suits for $150.**

VIOLA ROOT CAMERON

Genealogist

ESTABLISHED IN 1913

FAMILY HISTORIES
COMPILED AND PUBLISHED

COATS OF ARMS

CORRESPONDENCE INVITED

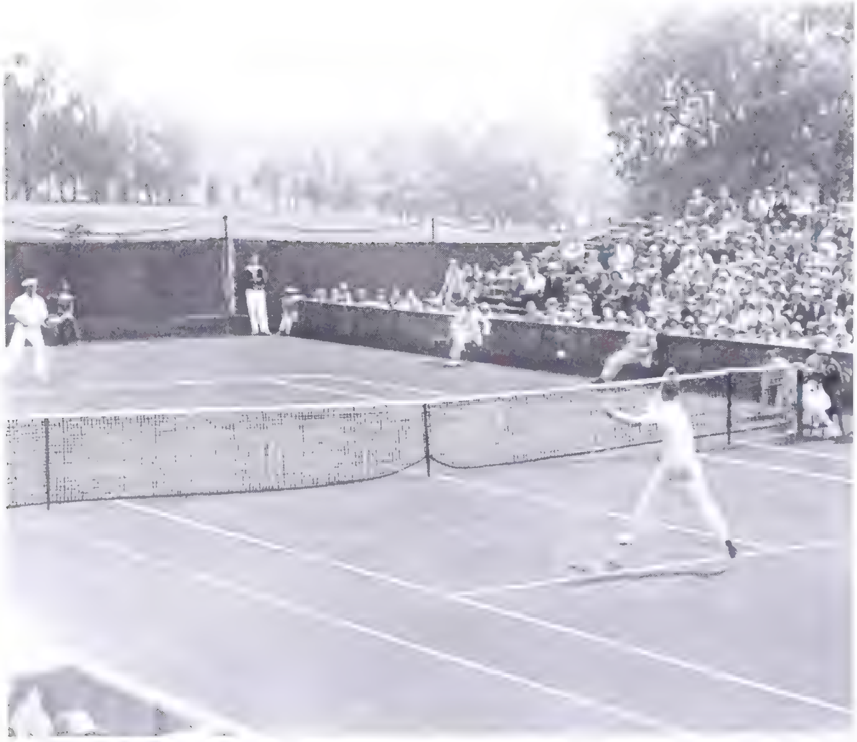
521 FIFTH AVENUE
NEW YORK

57 CHANCERY LANE
LONDON

56, FAUBOURG SAINT-HONORE
PARIS

AMSTERDAM BERLIN

Your Order Now
Insures Quick Possession of Your Own
Fast-Drying En-Tout-Cas Court
NEW IMPROVED



Championship Play on "En-Tout-Cas" Courts at Chevy Chase Club, Maryland.

"EN-TOUT-CAS" Tennis Courts were originally designed as a substitute for turf. That they have accomplished that purpose while insuring a perfect playing surface 30 minutes after rain, is the testimony of hundreds of the world's leading players.

There are few things that you or your family or your guests will derive greater pleasure from than one of these courts. Glarless, dustless, and economical to maintain, they will add months of playing time to each tennis year. Our nationally organized service department will insure you the quickest possible delivery. Write today for complete details about southern and indoor construction.

Ask for Booklet R

A Few for Whom We Have Built "En-Tout-Cas" Courts in All Parts of the Country

F. Skiddy von Stade
Charles E. Mitchell
The Creek (Club)
Grosse Pointe Club
Lester Armour
Mrs. Kersey C. Reed
Dr. H. D. Lloyd
Wm. B. Osgood Field
Sidney M. Colgate
Saddle and Cycle Club

Sole American Agents

H · A · ROBINSON & CO · *Inc.*
400 MADISON AVENUE · NEW YORK, N. Y.

Pacific Coast Representative
Robert Hunter, Jr., 1530 Latham Square Building, Oakland, Calif.
422 Van Nuys Building, Los Angeles, Calif.

Canadian Agent: E. A. Purkis, Ltd., 53 Yonge Street, Toronto

Sole Makers and Patentees: The En-Tout-Cas Co., (Syston), Ltd., Eng.

Patented in Great Britain, U. S. A., Canada

$150.00

Silk Robe
Unlined, $110.00

DISTINCTIVE HOLIDAY GIFTS

French Silk Neckwear, Lounge Robes and Lounge
Suit of Luxurious Quality are here Illustrated

Illustrated Brochure sent upon request

Lounge Suit, $225.00

A. Sulka & Company

SHIRTMAKERS AND HABERDASHERS

LONDON
27 OLD BOND STREET

NEW YORK
512 FIFTH AVENUE

CHICAGO
6 SO MICHIGAN AVENUE

PARIS
2 RUE DE CASTIGLIONE

CHARLES *of* LONDON

NEW YORK
2 WEST 56TH STREET
730 FIFTH AVENUE

LONDON
7 WOODSTOCK STREET
NEW BOND STREET

Member of the Antique and Decorative Arts League

JOHN LEVY
GALLERIES

PAINTINGS

ONE EAST 57TH STREET
NEW YORK

BURLINGAME
PUBLIC
LIB

Even in California

TRADERS CHOOSE *the* GUARANTEED CLIMAT

of Manufactured Weather

IF THERE is one place where a man should be free from the annoyances of heat and humidity, it's on a stock exchange floor.

A quickly melting collar, a perspiring brow, a feeling of acute personal discomfort, are direct handicaps to the concentration and rapid action that are demanded during trading hours.

San Francisco traders made sure that these drawbacks to the swift, accurate transaction of business would be ruled out in their new Stock Exchange Building. The outdoor climate of San Francisco is fine—yes. But indoors, where crowds collect, the temperature and humidity quickly rise so that rooms become stuffy and oppressive.

So Manufactured Weather was called upon to give this new Exchange a steady, comfortable indoor climate, maintained at all times by scientifically dependable regulation. Now the new Detroit stock exchange is being similarly equipped to give ideal weather in the zero days of winter and the moist hot days of summer.

Manufactured Weather is the name given to the healthfully comfortable air conditions produced by the scientifically designed equipment of Willis H. Carrier and his associates.

Manufactured Weather removes the discomforts of too much humidity—the mugginess, the heavy, oppressive atmosphere. It eliminates the danger of too little humidity—the dry, hot air of most artificial winter heating that makes trouble for noses and throats.

The air is kept comfortable both winter and summer. It may be cooled and its humidity reduced to a state of perfect comfort on any hot day. And it never has to go to dry-as-Sahara eighties to keep you feeling warm in winter.

At all times the air is steadily diffused with a gentle draftless motion. And finally, Manufactured Weather performs one more very important service by removing the irritating dust and dirt from the air.

For further information about Manufactured Weather, its thousands of industrial and personal comfort installations, its economic value as an investment and in lowering the rate of building obsolescence, address your request to our Newark office, who will be pleased to send you the attractive financial story.

MILLER & PFLUEGER, ARCHITECTS — LELAND & HALEY, CONSULTING ENGINEERS
LUDGREN & SWINERTON, INC., GENERAL CONTRACTORS

IT'S ALWAYS FAIR WEATHER *inside the new San Francisco Stock Exchange. Members never have the discomfort of bad or inefficient inside air conditions to add to the strain of the day's steady activity. Read in the column at the left how Manufactured Weather provides them with constant comfort, winter and summer.*

THE SAN FRANCISCO STOCK EXCHANGE, *one of the fine examples of a thoroughly modern building of this type.*

Carrier Engineering Corporation
NEWARK, NEW JERSEY
OFFICES: New York, Philadelphia, Boston, Chicago, Cleveland, Washington, Detroit, Dallas, Los Angeles
EXPORT DIVISION: 505 Fifth Avenue, New York

CARRIER ENGINEERING CO., LTD.
LONDON, PARIS, BOMBAY,
CALCUTTA, JOHANNESBURG

CARRIER
LUFTTECHNISCHE GESELLSCHA
STUTTGART, BERLIN

Manufactured Weather *makes* "Every day a *good* day"

New North Coast Limiteds

CORNER OF CARD ROOM IN THE OBSERVATION-CLUB CAR

SEASONED travelers are experiencing keener enjoyment from their trips to California by going the **New North Coast Limited** way between Chicago, the Twin Cities and the Northern Pacific Coast.

These luxurious new trains with their improved roller-bearing smoothness have set a new standard of transportation service, along a scenic route, the beauty of which changes, but does not wane, with the seasons.

For Western travel information and free illustrated booklet, address E. E. Nelson, 302 Northern Pacific Railway, St. Paul, Minn.

Vick's NuwuD
Bartlett Heal Collar
The Bartlett Way
BARTLETT GREEN TREE FOOD
ANALYSIS

DROUGHT WARNING TO TREE OWNERS

Water alone cannot save your trees

Feed them liberally now to stave off this serious threat to their future health

ONE year of drought is a severe drain on the vitality of any tree.

Two successive years of such unprecedented drought as we have just experienced is an immediate challenge to all tree owners.

Act now, at once, to offset this dangerous menace to the health and beauty of your trees. An immediate step to save them for future years is to feed them liberally at this time. Under drought conditions the water supply is so low that the leaves can no longer manufacture the necessary amount of food—the entire organism literally suffers from malnutrition. Trees entering the winter season with weakened vitality often die or are permanently disfigured, surviving only to fall an easy prey to the attacks of destructive insects or fungus diseases during following seasons. Science has proven that healthy, thrifty, vigorous plants more easily resist such attacks.

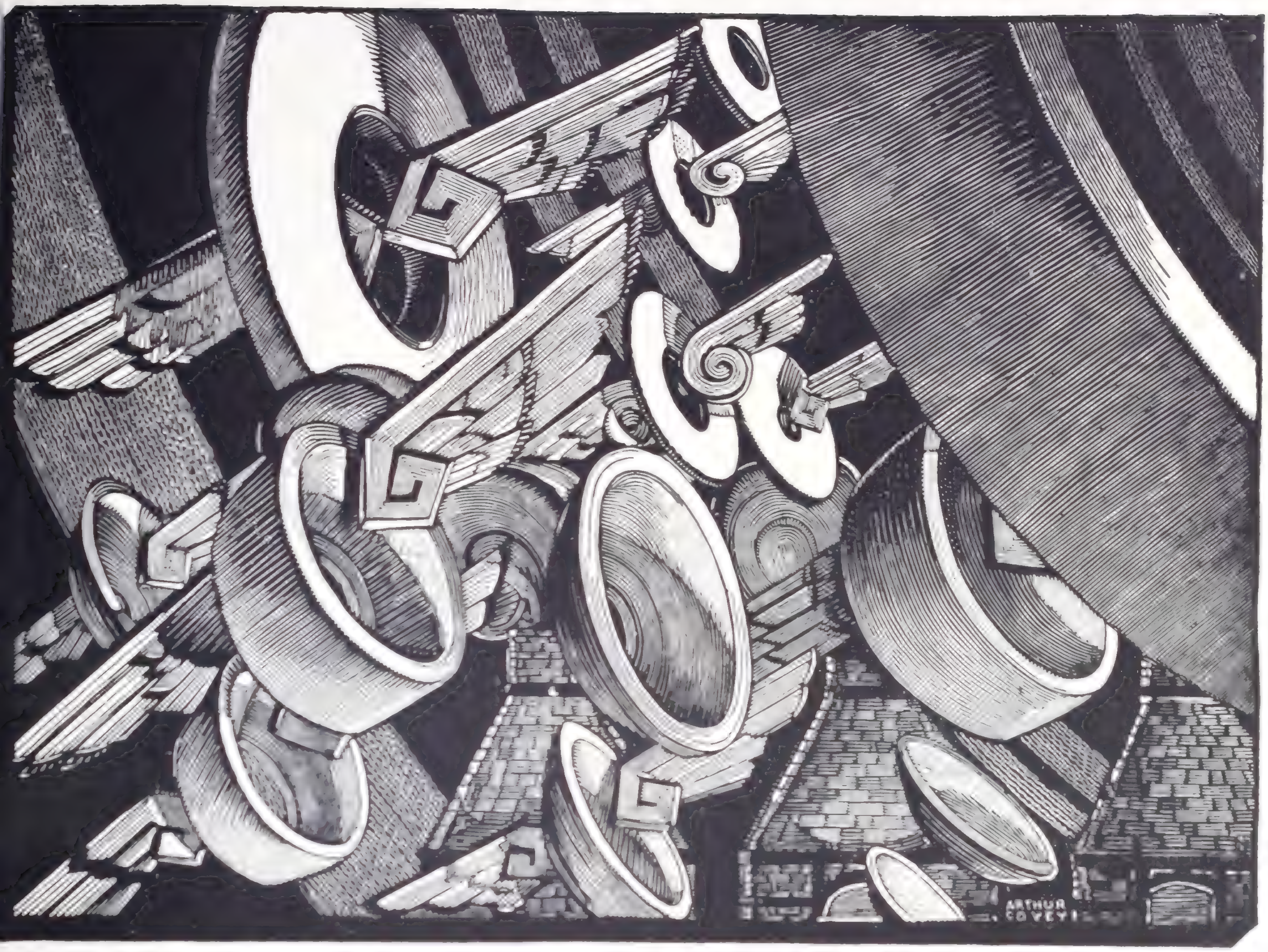
By feeding now your trees can take advantage of late Fall rains to store up rich food reserves. We feed trees with the famous Bartlett Green Tree Food, so compounded that it gives immediate nourishment yet continues to become available over a long period.

For information write or phone the Bartlett branch near you, or to Stamford, Connecticut.

The F. A. BARTLETT TREE EXPERT COMPANY

Operating also the Bartlett School of Tree Surgery, and the Bartlett Tree Research Laboratories

STAMFORD, CONNECTICUT
Branch Offices:
Philadelphia White Plains Boston Rochester, N.Y. Westbury, L.I. Orange, N.J.
Syracuse, N. Y. Chicago (*Evanston*) Danbury, Conn. Pittsfield, Mass. Wilmington, Del.



Forth from the kiln
Wheels! Grinding Wheels!
On wings of speed
Wheels! Grinding Wheels!
Out over land and sea
Wheels! Grinding Wheels!
Summoned by all who fashion
products of perfection.

NORTON COMPANY, WORCESTER, MASS.

Grinding Wheels . . Abrasives for Polishing . Pulpstones . . . Floor and Stair Tile
Grinding and Lapping Machines . Refractories . . Porous Plates . Abrasive Aggregate

The New York Trust Company

Capital, Surplus and Undivided
Profits $48,000,000

COMMERCIAL BANKING
DOMESTIC *and* FOREIGN

CORPORATE
and
PERSONAL TRUSTS

100 BROADWAY

40TH STREET AND MADISON AVENUE 57TH STREET AND FIFTH AVENUE

A New Merchandising Plan

CAPITALIZING GOOD WILL OF 5 MILLION CONSUMERS

Launched by Lehn & Fink

This month in Chicago is the peak of an introductory campaign which Lehn & Fink have put behind three new facial products under the name "HINDS." The merchandising conception which underlies these products is a fine example of trademark expansion, through the application of an old name to modern-day products in a manner both daring and sound.

Hinds Honey & Almond Cream was purchased by Lehn & Fink in 1925. HINDS' volume was over two-thirds of the hand lotion market. Its users were most loyal; campaigns by competitors had proven disappointing.

Controlling such a large proportion of the hand preparation market on a 50c item, Lehn & Fink followed a conservative policy of persistent promotion with the result that by 1929 they had a total of 5,000,000 HINDS users.

Meanwhile they had analyzed the *facial* preparation market in terms of three important classifications,

1. The "salon" group of high-priced, special-purpose lines;
2. The "popular" group of low-cost products sold to millions;
3. The "intermediate" $1.00 specialties and "short" lines.

They then decided to enter the popular-priced market. They had developed three new products of outstanding quality — a liquefying cleansing cream, a greaseless texture cream, a liquid toning cleanser.

The question of product name was of course paramount. Only merchandisers wedded to the policy of *one* name for one product can appreciate the significance of the Lehn & Fink decision to alter radically the connotation of the name "HINDS." To associate the name of a hand preparation with three new facial products was a drastic move.

And only merchandisers versed in the subtleties of the cosmetic field can appreciate the significance of marketing "salon-quality" products at popular prices—*leading* consumer demand by a safe margin instead of simply meeting it.

The three new packages were designed last May. Those who have seen them can appreciate that step. They are "placed" enough above mass lines to achieve individuality but enough below salon lines to appeal to millions.

In July, prices were determined: 4 ounces for 65¢; 2 ounces for 40¢; a policy of giving big value with a view to building high earnings from a large-scale production.

Then came plans for "preparing" the national market by conservative tie-ups with Hinds Honey and Almond Cream: (1) A package insert that gives the complete sales story on the new products and features a special offer having a cash value of 70¢; (2) A box in all Honey & Almond Cream advertisements calling attention to that special offer; (3) Tie-ups in trade promotion and selling plans.

The primary effort in 1930 was an intensive campaign in Chicago: five rotogravure pages in the Chicago Tribune at intervals of two weeks, supported by smaller advertisements.

The advertising theme is based on the idea of "salon quality" at a reasonable price. The design of the new packages mentioned above, conveys richness and individuality—everything that salon products imply—except price.

The copy is addressed to the masses. In illustration and text it is couched in the idiom of the day. It is blunt and bold. It has the flair and news-appeal of the pictorial newspapers. It brings the language of every day to the appeal of beauty.

* * *

Our part in this merchandising development has been interesting. We have learned from our client. In turn, we have made contributions; for example, recommending policies as to price and style, designing new packages to conform with these policies and assisting step by step in determining markets and in carrying out the merchandising work.

Business men and bankers, familiar with existing practices, will be interested to know that we favored a reduction in commissionable space, in order to provide for sampling, a non-commissionable expenditure.

In so doing we faced no decrease in our own income. Our Service Compensation and Retainer are independent of the size of the appropriation. Moreover, our Retainer or profit increases when the client's sales volume increases, and not before.

COWAN & DENGLER

ADVERTISING • MERCHANDISING • SALES COUNSEL

NEW YORK

IF YOU WANT
AIR TRANSPORT FACILITIES

CLEVELAND has pioneered aggressively in air transport development. Her 1,040 acre municipal airport was the first in the United States to receive an A-1 rating. Its eleven hangars accommodate sixty planes, and its observation tower carries remote control of lighting facilities for the entire field. Bordering the airport is a mile-long strip of land allocated for industrial uses.

¶ Lake front facilities are also provided for hydroplanes in the harbor adjoining the downtown district. In the residential section are several privately owned fields.

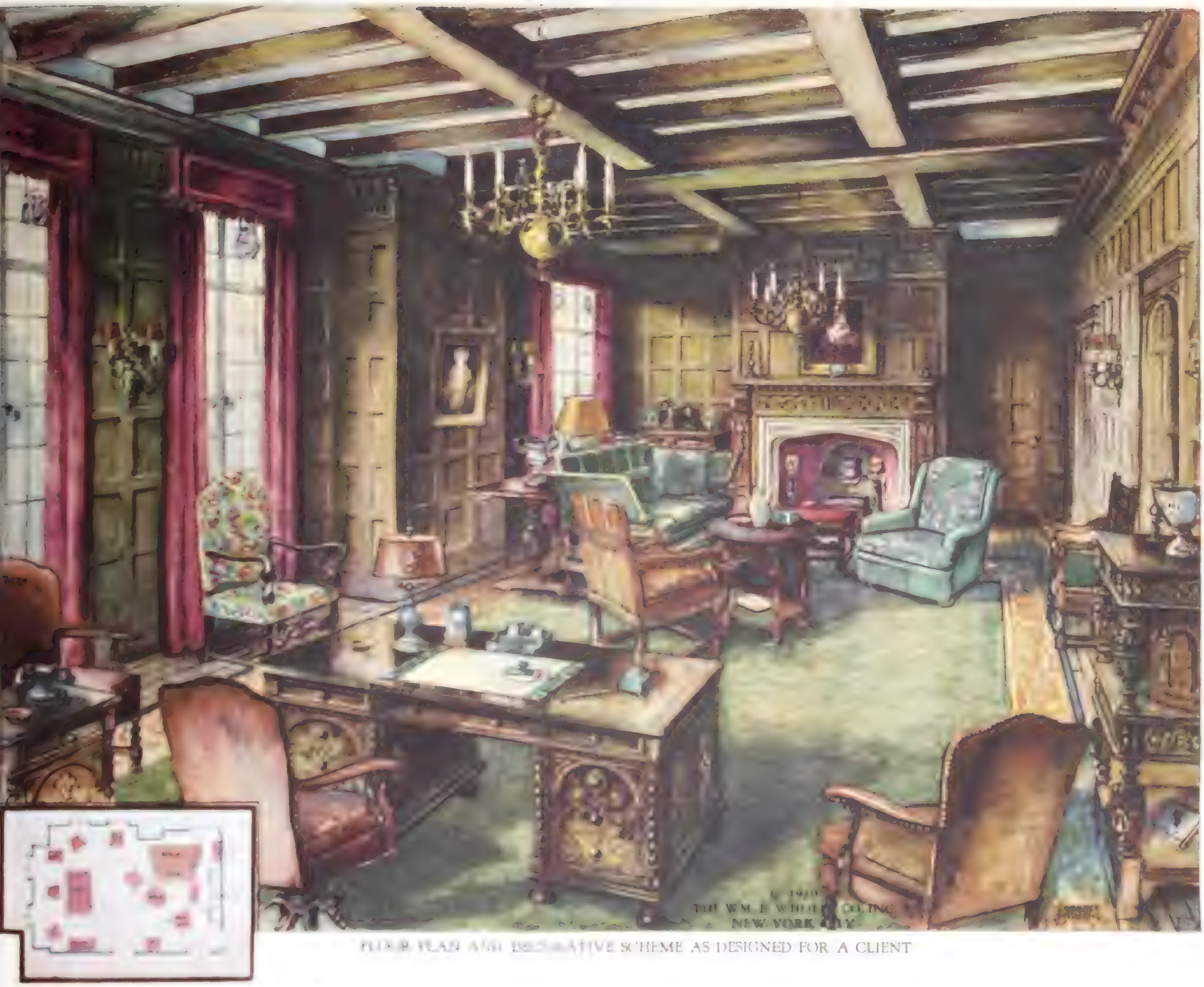
¶ In 1929 Cleveland averaged 7800 pounds of air express and mail per day, and the volume is steadily increasing. From Cleveland, mail reaches 33 cities direct by plane and there connects within 24 hours with practically all the leading cities in the United States.

¶ Air mindedness is a measure of a city's progress, and of the responsiveness of its citizens and its government to better ways of doing business. At Cleveland, these factors are exceptionally favorable to business. For specific information on Cleveland's air transport facilities or any other important location factor, write this Bank.

© G. T. Co.

GUARDIAN
TRUST COMPANY
CLEVELAND, OHIO

RESOURCES MORE THAN $165,000,00


THE WM. F. WHOLEY CO. INC.
NEW YORK CITY

FLOOR PLAN AND DECORATIVE SCHEME AS DESIGNED FOR A CLIENT

AN office such as this is not the result of chance. It is the product of experienced planning, talented designing and skillful execution. It should also reflect the personality of its occupant and harmonize with the nature of his business or profession.

The William F. Wholey Company, Inc. offers a specialized planning and decorative service to assist executives in creating offices of distinction.

Studies of individual requirements and sketches will be made for prospective clients, without obligation.

The **WILLIAM F. WHOLEY CO.** *Inc.*
Equipment Specialists
11 East 36th Street, New York

Decoration ~ *Furniture* ~ *Office Planning*

How often are Your Security Holdings ~ ~ Submitted to a Laboratory Test? ~ ~

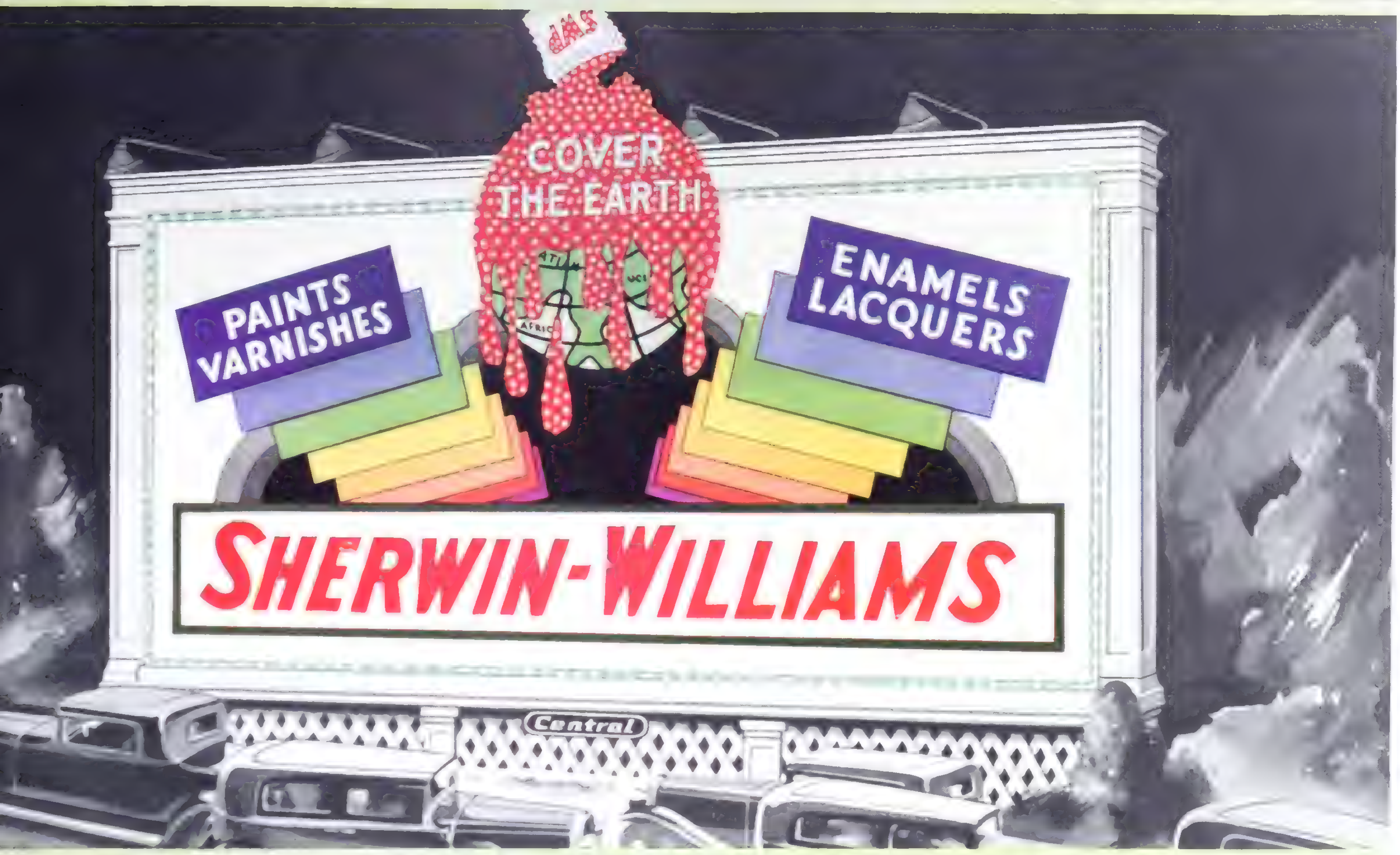
INVESTMENTS are simply the financial representatives of commerce. Their merit is only that of the enterprises giving rise to them. In order to determine the exact position of your investments in municipal, industrial, railroad and public utility securities and judge how immediately they fit your needs, the precise and accurate methods of the laboratory must be employed.

Continuous research, penetrating to the source, critically investigating all factors that determine the present prosperity of a city, a manufacturer, a railroad or a power unit, is the first essential. The facts thus gathered must then be interpreted by financial analysts, and so applied to your investments that their general soundness and specific suitability may be definitely established.

The Stone & Webster and Blodget, Inc. organization, with its Stone & Webster background of more than 40 years experience in engineering, construction, management and finance, is equipped to render this exceptional service.

STONE & WEBSTER
and BLODGET
INCORPORATED

NEW YORK ~ ~ BOSTON ~ ~ CHICAGO ~ ~ PHILADELPHIA



"We are believers IN THIS KIND OF Advertising"

BURLINGAME
PUBLIC
LIB.

TO "COVER THE EARTH" with S-W Paints and Varnishes, the Sherwin-Williams Company have long known that the earth must first be covered by S-W advertising. They know, too, that the people who live on this earth live outdoors, think outdoors, buy outdoors. They "cover them" by strategic Outdoor Display, not only in their home city but from coast to coast. ¶ Outdoor displays of this spectacular nature tell a story through the eye, day and night, and Sherwin-Williams are strong believers in this kind of advertising. ¶ Since these displays were built Sherwin-Williams have had any number of fine comments about them. They have put still further interest and snap into their important Cleveland activities, tying up splendidly with their national advertising campaign. ¶ That important part of the earth known as the North Ohio Market, with its three million purchasing-minded and prosperous populace, is covered with S-W thoroughness by the coordinated Central Outdoor facilities. You can win and hold that market both quickly and economically if you use the Central plan for your business. ¶ Now that sales costs must stand up under constant scrutiny, you should have that plan before you. Next year's program must make sales *with* profits. Be sure you know why Central can do just that for you.

THE CENTRAL OUTDOOR ADVERTISING COMPANY, Inc.
1028 Carnegie Avenue, CLEVELAND, OHIO - - 320 Vance Street, TOLEDO, OHIO

Central

CLARK

GRAVE VAULT

ITS PERMANENCY
Symbolizes Eternal Memories

FROM time immemorial mankind has desired, for the mortal remains of its loved ones, a form of protection as imperishable as eternal love itself—so resistant to the elements that there could be no doubt as to its ability to protect absolutely.

Today this age-old desire may be completely satisfied in the Solid Copper Clark Grave Vault, whose ability to protect through the ages is assured by these safeguards: (1) it is made of solid copper, 10 gauge in thickness, and weighs over six hundred pounds; (2) its sides and top are of one continuous piece; the ends are welded inside and out, thus leaving no way for forces of disintegration to enter; (3) it embodies a proven principle of vault construction, that of the diving bell, found in all Clark Vaults; (4) unaffected by the elements, typical alone of copper, it carries a guaranty unlimited by time.

And this resistance to time and change is matched by outstanding beauty and elegance, produced by its soft mat finish, and enhanced by the artistic design etched in polished copper around the top. Truly, the Solid Copper Clark is a most fitting protection for the costliest casket, and in perfect keeping with the funeral of pretentious appointments.

The better funeral directors everywhere can supply the Solid Copper Clark; also the following models of Armco Ingot Iron or Keystone Copper Steel in Gray and White Lacquer Finish; Copper Bronze or Gold Bronze Finish; Cadmium plated by Udylite Process in Silvertone or Copper Finish.

Write for booklet—"A Modern Interpretation of Age-Old Reverence." The Clark Grave Vault Company, Dept. 26, Columbus, Ohio.

Less than Clark complete protection is no protection at all.

SOLID COPPER CLARK GRAVE VAULT

Your Papers are Safer from Fire in *Wood Furniture*

TRY this experiment—hold a lighted match under a paper clip. Note how the metal glows . . . red-hot. But the match does not become warm until the flame reaches the fingers.

This explains why wood desks preserve papers and valuable data from fire. Many materials transmit heat . . . "cook" papers. Wood desks, though they may char or burn, keep heat away from contents.

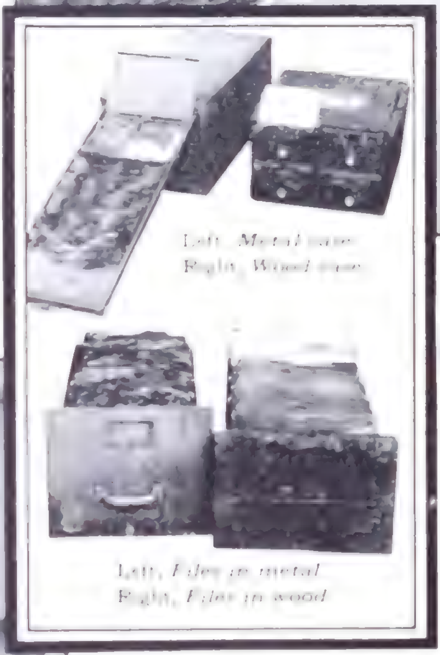
Wood office furniture has many other exclusive advantages. It is stronger, pound for pound . . . warm and friendly to the touch . . . and its natural beauty cannot successfully be imitated.

The leading American manufacturers of wood office furniture provide a wide range of appropriate models—period suites for executives . . . desks and chairs for other employees . . . furniture for all office needs. Consult your local dealer.

• • •

SEND for the free booklet, "*Planning the Modern Office in Wood*," which contains data on office planning and a chart that will help you lay out an attractive, efficient office. WOOD OFFICE FURNITURE ASSOCIATES, INC. Affiliated with the National Lumber Manufacturers Association.

Executive's office, MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY, *Springfield, Mass. Charming, dignified through the "natural" beauty of wood.*



Left, *Metal case*
Right, *Wood case*

Left, *Files in metal*
Right, *Files in wood*

AUTHENTIC EXAMPLES *of the destruction by fire of documentary records in metal cases which became red-hot, burning their contents to a crisp. Note that the wood cases kept papers intact and free even from smoke smudges.*

Wood office furniture, damaged by fire, can be repaired without special tools or expensive mechanics. A carpenter or woodworker can scrape . . . varnish . . . polish . . . easily restore a wood desk or wood chair to original condition.

THE CROWELL PUBLISHING COMPANY, *New York City. This organization uses over 500 wood desks and 800 wood chairs. Employees accomplish more when they have the comfort and friendliness of wood.*

Mail Today . .

WOOD OFFICE FURNITURE ASSOCIATES, INC.
Dept. 311, 130 Lexington Avenue, New York City
Gentlemen: Please send me the free booklet,
"Planning the Modern Office in Wood"

Name

Address

City State

WOOD OFFICE FURNITURE

Off the Record

Intangible Stockholders

AMONG the intangible assets of which any corporation may well be proud is the avid interest of its stockholders in company activities. When this interest extends to the investing public, no corporation dislikes it. Great, therefore, must be the intangible assets of Vanadium Corporation of America, for statistical agencies, newspaper and all other likely sources are continuously besieged by inquiries as to the state of the company's corporate health. Such inquirers may learn that the floor value of Vanadium stock has commuted between the Sixties and the Early Hundreds so frequently that no stockholder can long keep his eyes off the ticker; that its market has been so active that the equivalent of its entire outstanding stock has on occasion been turned over within a week; that Vanadium shares have sold at a higher price (143¼, April 26) since last autumn's excitement than they ever did before (previous high: 116½, 1929).

Vanadium couples with this trading excitement all the elements of romance and amusement that exploration in Andean heights and Rhodesian hinterlands can offer.

Yet on the second Monday of September not a single stockholder was sufficiently interested in the annual meeting of the company to attend it. Two newspaper men and a few of the company's officers waited through the hour to hold the meeting open, but no stockholder appeared.

Mr. Alanson and Mr. Gradison

THE fact that Bertram E. Alanson was brought up in Guatemala City accounts for a good deal. His liking for the leisurely, gayly colored life of Latin America, for one thing, and Latin America's liking for him, for another. "Beltran, old man," said a President of Chile to him, "you're no gringo. You're one of us." To half the magnificoes of South America, he is "Beltran." To his Guatemalan upbringing may also be traced his enthusiasm for Italian operas, many of which he knows by heart, and his strange preference for reading Cervantes to playing golf. Perhaps it has something to do with his friendships with people like W. Somerset Maugham, who dedicated *Rain* to him. So deeply is the pleasant life of the tropics imbued in Beltran's nature, indeed, that it took two earthquakes to get him into the swing of American business. The first, in 1902, rocked Guatemala City into a ruin and forced Alanson Sr., planter and banker, to sell for $40,000 in paper what a few minutes before had been worth $400,000 in gold. After this, the Alansons moved to San Francisco, where, four years later, the famed earthquake took place, once more reducing the family fortunes. Within two years after that harrowing time, however, young Beltran had bought a seat on the San Francisco Stock Exchange. He is now president.

In sharp contrast to Beltran Alanson is Willis D. Gradison, who at thirty-one was elected president of the Cincinnati Stock Exchange. Mr. Gradison dislikes singing, goes to symphony concerts only "because of the contrasts in loudness and softness," and reads textbooks on taxation problems in his spare time. Whereas Mr. Alanson is keen on 15th century Spanish literature, Mr. Gradison claims there is nothing so interesting as the brokerage business. And whereas a good part of Mr. Alanson's youth was spent in the company of bullfighters, actors, and such dubious folk, Mr. Gradison attributes his success to "constant plugging" as a youth. Finally, Mr. Gradison remarks that he enjoys trading on the floor "because it means matching your shrewdness against the other fellow's and costs money to be wrong." Mr. Alanson, with his Southern background, takes a different attitude towards business. His ideas on trade with South America are interesting.

"Don't think that we can have Latin-American trade for the asking. We must woo it, just as England, France, and Germany are doing. We have much to overcome, and I regret to say that we have not made the best of our opportunities. The old carpetbagging must give way to a new trade diplomacy. Foreign trade in the future is not for the rapacious and cocksure, but for the understanding and the sympathetic. We must train up a new generation of young men schooled in the arts of human relationship, for the old methods simply will not work any longer."

Thus two dissimilar men in similar jobs.

Berrying Governor

THE Governors of Massachusetts, as a rule, have been men of simple Yankee virtues and homely Yankee diversions. It is remembered that Calvin Coolidge was a consistent fisherman even in days of stress. And the current Governor, Frank G. Allen, a business (leather) man sufficiently wealthy to cultivate almost any hobby he might choose, rides one even less pretentious. Mr. Coolidge required at very least a pail and shovel for his bait, a piece of string, a bent pin, and a bobber. The Hon. Mr. Allen requires only a pail. For his hobby is picking blueberries. He says, "I would rather pick blueberries than do anything else. I get right down on all fours and pick and pick."

Before he became Governor, his penchant for giving away gloves had been noted by many. Upon his associates in the Armour Leather Company, of which he was chairman of the board, and in other New England industrial enterprises with which he was associated, Mr. Allen bestowed gloves for no apparent reason than that he liked to do so. And since he has moved into the State House many a casual caller has been surprised with a similar gift.

But the glove-giving and golf, which he plays a little, are minor diversions in the Governor's life. His passion is blueberry-picking, and he spends his vacation in August of each year in Whitefield, New Hampshire, where they grow in great abundance. This year he was so impatient to get at his picking that he could not wait to get to Whitefield, ordered his chauffeur to stop near Ossipee in a field which he says produces the biggest and most luscious blueberries in the state of New Hampshire. So adroit has he become that despite the most earnest efforts of the chauffeur, the Governor has outstripped him, the final score being ten quarts to six.

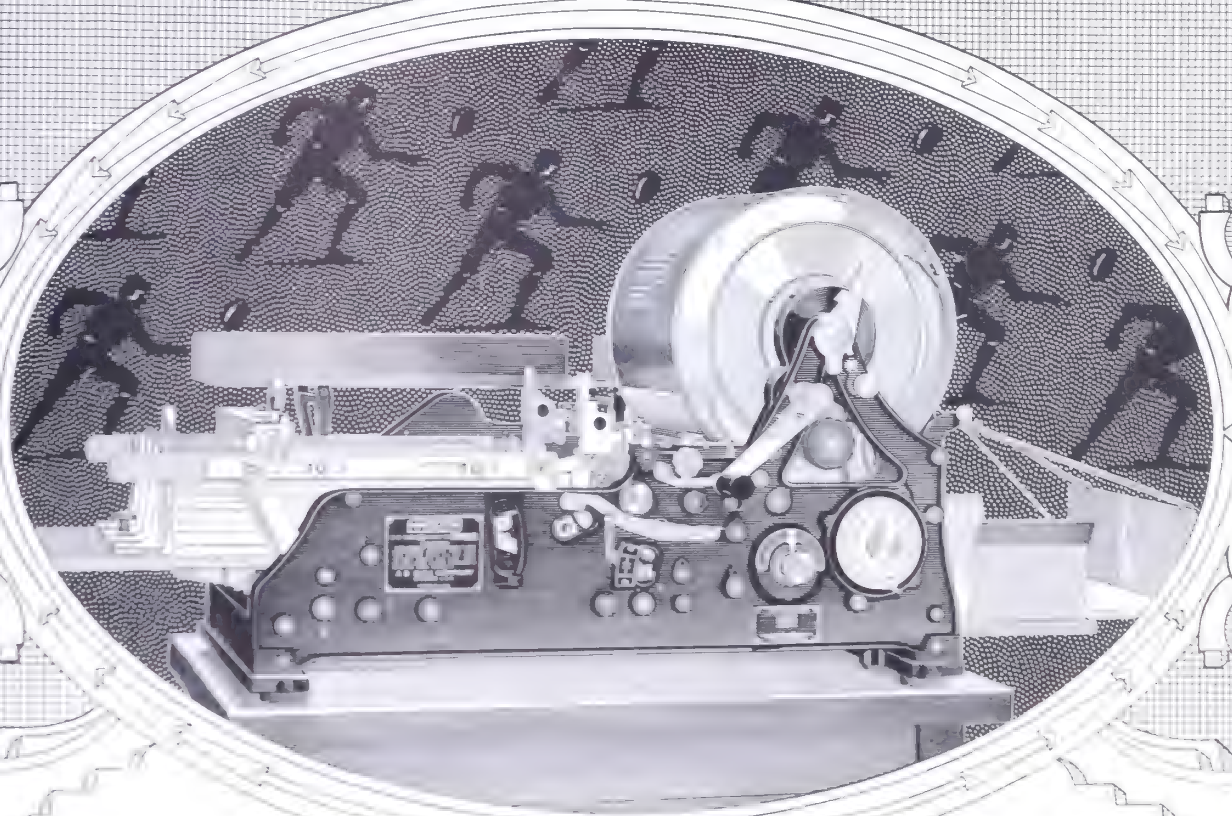
Acme

GOVERNOR FRANK G. ALLEN

From Mice to Elephants

FOR a number of reasons, Lititz, Pennsylvania, population 4,000, is not without interest. Strange creeds center there: the Amish Mennonites, who wear no buttons, the Mennonites, and the United Brethren. A strange tongue is spoken there: namely, that outlandish mixture of Dutch, German, and English known as Pennsylvania Dutch. And strange things are made there: notably, pretzels and mousetraps. Lititz, indeed, confirms Emerson's remark about mousetrap makers. For to obscure little Lititz comes the world for most of the traps, mouse and otherwise, that the world uses. Thus is the Sage of Concord justified as a business prophet.

The mousetrap maker of Lititz is Chester M. Woolworth, a cousin of the Five and Ten Woolworths. He is president of the Animal Trap Co. of America, whose catalogue bears the flamboyant legend: "Animal Traps of



THE BETTER GAME

Modern football has become a glorious game of skill, through refinements and improvements. Yet it is essentially the good old game of the 'Nineties. This new model Mimeograph is a sharp advancement over all Mimeographs that have gone before. Yet it represents just a natural advancement of the basic Mimeograph idea. It still delivers neat duplicates of all kinds of typewritten forms, bulletins, graphs, charts, outline drawings, handwriting, etc., in hourly thousands and at small cost. But it does these important jobs better than they have ever been done before. Stand and machine are now a single unit. Controls are simplified and more automatic. The speedier positive feed-table takes a whole ream of impression paper at one time. The better Mimeograph! Substantial betterments of especial interest to present Mimeograph users! Write A. B. Dick Company, Chicago, today for further details, or consult direct branch in any principal city.

MIMEOGRAPH

EDISON-DICK
MIMEOGRAPH
CHICAGO

Gentlemen's Clothes

OF STYLE AND SUPERIORITY

Individuality, style, superior quality and true value are embodied in our presentation of gentlemen's clothes for Fall wear, in specially selected woolens from the finest makers of Great Britain and America

OUR CLOTHES ARE TAILORED FOR US
BY HICKEY-FREEMAN
WITH DISTINCTION AND UNDERSTANDING

F.R. TRIPLER & CO.
Outfitters to Gentlemen · *Established* 1886
MADISON AVENUE AT 46 STREET
New York

Every Description to Catch All Animals from Mice to Elephants." Last year he sold 25,000,000 mouse and rattraps, not an extraordinary number when one considers that there are enough rats in the U. S. for every person in the country to have his own private rat, if he so desires. Montana, last of the forty-eight states to remain ratless, was invaded last year, which was sad news for the housewives, but good news for Mr. Woolworth and his Animal Trap Co. of America. The most profitable victims of Mr. Woolworth's contrivances are neither mice nor rats but muskrats. So populous are the swamplands of Louisiana that the muskrats of this state yield more pelts than do all the animals of Canada put together. Mr. Woolworth's star customers in Louisiana are in the habit of buying 10,000 or 15,000 muskrat traps a year.

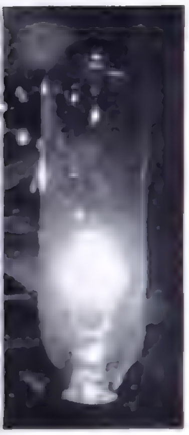
With the exception of the block-and-wire mousetrap, all of Mr. Woolworth's machines work on a single principle. Between the Newhouse No. 1 trap, which retails at forty cents and is used for muskrat, mole, and such small beasts, and the No. 6 trap, which retails at $30 and may be used for bear or elephant, there is no essential difference. The elephant trap is merely a muskrat trap about four times enlarged, which means chiefly that its jaws clamp together with a pressure of 1,000 pounds as against the twenty-five pounds pressure of the No. 1 trap. This pressure, by the way, is carefully gauged for each type of animal: if it is too weak, the animal works loose; if too strong, it cuts off the leg and the prey escapes. The spring principle, and indeed the steel trap itself, was devised by one Sewall Newhouse, a blacksmith who belonged to the once-notorious Oneida Community in New York State. He forged the first steel trap by hand some eighty-five years ago. The traps that Newhouse laboriously forged differed no whit in fundamentals from the traps that are being turned out by the thousand in Lititz today.

Old Sewall Newhouse passed on his trap patents (long since expired) to the Oneida Community, and soon trap-making was the most profitable of the Community's many business ventures. By 1880 the Community, changed into a joint stock company, had begun to make silverware (famed Community Plate). After the War, odd combinations of traps and silverware began to prove more and more uneconomic until in 1925 the Community's trap business was $87,000 in the red. At this point young Chester M. Woolworth, an Oneida executive, and his associates bought out the trap business and moved the plant to Lititz. The new owners made a $54,600 net income from their first year's operations, a figure which had grown to $175,000 two years later and which now ranges from $200,000 to $300,000 a year. Mr. Woolworth, to whose skill and enthusiasm in the matter of trap-making chief credit for this showing is due, is a man of simple tastes, open and frank, with a great head for figures. Determined to make a go of traps, he has installed the most modern machinery at Lititz, reorganized his sales department, advertised nationally, and offered a national prize for the best pelt trapped each year. He sells traps all over the globe (he has just returned from China where he looked after his sales forces), getting about 30 per cent of his $1,500,000 gross from foreign sales. Woolworth would sell even more traps abroad were it not that this country is by far the greatest of fur producers, with Russia a poor second. His sales over here have been stimulated of late by the business depression, which has made a temporary trapper of many a backwoodsman. Behind 10,000 dozen on orders, the plant at Lititz is now working day and night to turn out traps and traps and traps.

Indiana Run

IN Indiana, as sometimes happens, a state bank failed. In Indianapolis, as it happens everywhere, but in this case it happened a few days after the failure, there was a holiday. One of the larger Indianapolis savings and loan companies, the Railroad Men's Building and Savings Association, observing the holiday, closed its doors. It announced the closing on the eve of the holiday in the usual manner. Placed

. . . BURNING . BURNING . BURNING .



IN the great testing laboratory at Nela Park—University of Light—60,000 General Electric Mazda lamps are put to the acid test of actual burning under users' conditions every year.

Here, in long racks, there is enough light to illuminate a city of 5,000 people—burning 24 hours a day.

Here are kept the records of all life tests made by each factory, where 200,000 additional Mazda lamps are tested every year under the same rigid conditions of every-day use.

Here are grouped, under the scrutiny of experts, all the implementia of testing and inspection, including potentiometers, for measuring light output, which are found in regular use in no other laboratory in the world.

Here are weather tests to tell how colored lights are standing up under exterior light . . . Volt meters, ammeters, hundreds of individual storage batteries for reading photometer lamps.

Here are thousands of lamps of all sizes, from the 10,000 watt lamps for motion picture and aviation field lighting down to the little lamps for automobile dashboards. All burning . . . burning . . . burning, to ensure the quality and performance of every General Electric Mazda Lamp that goes into actual use. The National Lamp Works of General Electric Company, Nela Park, Cleveland, Ohio.

GENERAL ELECTRIC
MAZDA LAMPS

this wonderful tonic bath for the skin

after shaving
after bathing
after exercise

Splash a few sparkling drops on your face . . . and watch fatigue-lines vanish, feel new life come tingling back . . . Give your whole body a 30-second rubdown . . . and note how cramped muscles relax, how all your skin is smooth as cool silk . . . Shaving lotion, body freshener, toilet water—all in one: Pinaud's Lilac . . . The delicately pungent freshness of French lilacs—the tonic stimulus of essences imported from Pinaud's own Paris laboratories—this famous formula is one of the most luxurious toilet essentials in the world. Enjoy it today! Pinaud, Paris—New York.

conspicuously, the form announcement read:

> THIS BANK WILL BE CLOSED TOMORROW ON ACCOUNT OF *such and such a* HOLIDAY

It was unfortunate that a woman depositor should have read only the top line. It was also unfortunate that, reminded of the state bank's failure, she should have elected to withdraw all her money. It was most unfortunate that she started a run which lasted three days in spite of the valiant efforts of other banks to support the bewildered and misjudged Railroad Men's Building and Savings. Thus may a run start, apparently for no better reason than a run in a woman's stocking.

But this run, in the end, turned profitable. For depositors, learning their mistake, redeposited. And cashiers in the bank discovered, after the tumult died, that the bank was richer by some $75,000 in saved interest on money withdrawn.

Railroading Hazards

THE livestock killed on the Central of Georgia in 1928 would fill sixty stock cars. There were 931 cattle, 549 swine, 142 horses, 39 goats, and 34 dogs, an average of one animal per mile of track. Such a gory record shows that even in the U. S. railroading is a hazardous profession. But in other countries the hazards are infinitely more varied and sensational. To match the Central of Georgia's prosaic cows and dogs, one might compile from recent instances some such railroad menagerie as follows . . . An angry hippopotamus charged a train in South Africa, could not be shot because of the game laws . . . Myriads of snails, crawling over the tracks in Morocco, held up all traffic . . . Bees swarmed around a wrecked car of honey pots on the Yugoslavian State Railways, kept the wrecking crew at bay all day . . . A tiger leaped in front of an Indian train, which prudently came to a stop until the beast leisurely moved off the track. The train crew now carries firearms.

Many another curious hazard, unknown to U. S. railroaders, helps keep down the amount of foreign trackage. For example:

In the Argentine, striking train crews may insist on obeying orders—with disastrous results. Recently, Argentinian railway workers were dissatisfied with their wages. They showed their resentment in a terrible way: by operating trains in literal obedience to the State Railroad Code. As they knew it would, disaster followed. Trains were hours, days late. Service was completely paralyzed. Argentinian passengers, less docile than American travelers, vented their rage on stations and cars, wrecking and burning all they could lay hands on.

In India railway strikers have discovered an even more effective mode of protest: to lie down on the tracks in great numbers, thus preventing a humane government from running trains. During the peak of the Gandhi enthusiasm, some 7,000 railway workers volunteered to thus register their feelings about England.

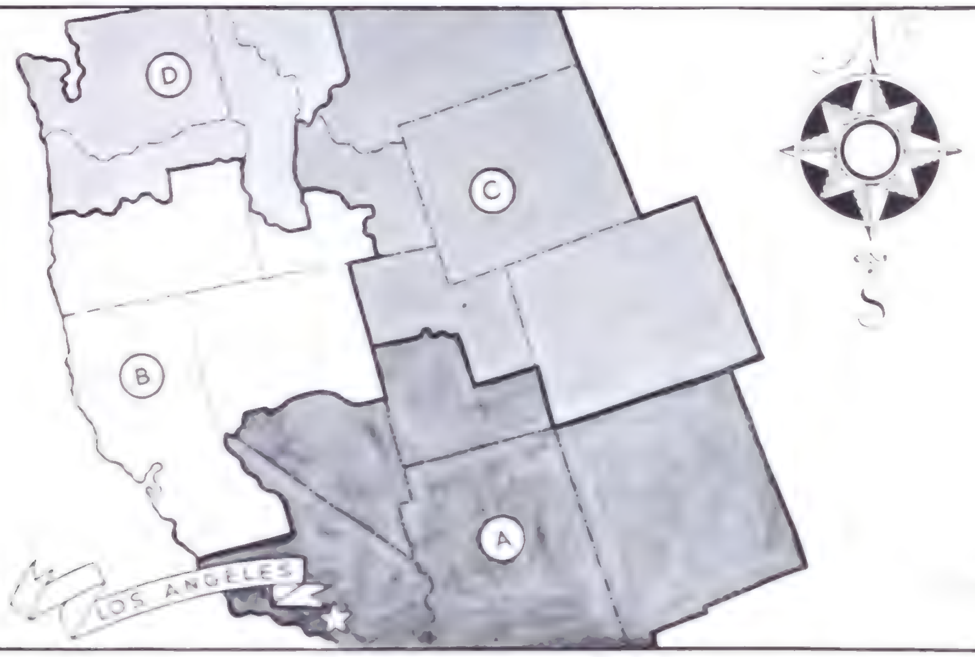
In Hungary farmers agitate for lower freight rates in picturesque fashion: 6,000 of them have sworn not to shave until rates are lowered.

In Bulgaria a station master dares not reprimand employees. When the Plevna Express was several minutes late, the station master sharply rebuked the engineer, discovered that he was a King, *the* King, in fact. Such episodes are bound to happen as long as Boris, of Bulgaria, keeps his passion for running locomotives. And when and if young Mihai becomes King of Rumania, the same mistakes may well demoralize Rumanian station masters. For Mihai, at the age of seven, can explain in some detail how an electric locomotive works, is especially proud of the fact that Rumania's first heavy freight locomotive is named *King Mihai I.*

In Canada passengers may have to decide whether or not they want to run the gauntlet of a forest fire. On the Canadian National's new Hudson Bay extension, a passenger train was halted by a three-mile stretch of crackling forest fire. With the passengers' consent, a dash was made, the train emerged safely with blistered paint and holes burned in the roof.

Western Market

12 Million People



URLINGAME
UBLIC
LIB.

served most economically from Los Angeles County

There is a distinct freight advantage in serving the Western Market of 12,000,000 population from Los Angeles County . . . its largest metropolitan center.

Zone A — Population 3,982,582 . . . Local market immediately tributary to and including Los Angeles County.

Zone B — Population 3,002,753 . . . Local market.

Zone C — Population 2,239,483 . . . Parity in freight rates enjoyed by Los Angeles County.

Zone D — Population 2,598,129 . . . Served from Los Angeles Harbor by regular steamship transportation, at low freight rates.

Truck haul delivery is made direct by manufacturers in Los Angeles County to three-fourths of the 4,000,000 people in Zone A . . . at a freight rate advantage so large as to more than offset slight rate differentials via water route to Zone D.

It will be obvious to the manufacturer who wishes to serve the entire Western Market that he can do so at a great saving by locating his plant in Los Angeles County

Industrial LOS ANGELES COUNTY

POPULATION 2,199,657

Manufacturing Executives Are Invited to Write to the Industrial Department, Los Angeles Chamber of Commerce, for Detailed Information Regarding this Great Western Market

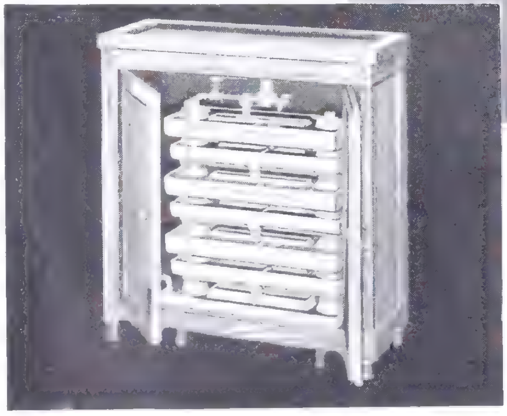
NOW... moist air [HUMIDITY]
for every radiator-heated home..!

AS LOW AS
$150
F. O. B. FACTORY
Installation Extra

Easy payments if desired!

Ingenious invention banishes dry winter air » » » » the cause of discomfort, colds, and cracked furniture!

FOR years engineers have tried to overcome winter dryness in the home. At last they have succeeded; the Doherty-Brehm Radiator Humidifier is the first and only successful low-priced humidifier. Automatic, silent, constant, it supplies the correct amount of moisture to the air in any home equipped with radiator heat—steam, hot water, or vapor.



Masters have produced beautiful wood cabinets for the Doherty-Brehm. Also in metal cabinet and for wall recessing. In metal cabinets, $150 to $225. In wood cabinets, $245 to $340; f. o. b. factory, installation extra.

Essential for health and comfort

Into America's finest homes it is bringing the breath of spring all through the months of winter. Fresh, moist air in every room; no dry, hot air to invite colds, bronchitis, and other winter ills; to wilt plants and flowers; to crack and blemish furniture, floors, and woodwork.

One Humidifier sufficient for average home

To provide this comfortable and healthful atmosphere, the Doherty-Brehm Radiator Humidifier evaporates just the right amount of water in the home—1 to 100 gallons a day, as may be needed! Positive automatic control; no moving parts to get out of order. No noise or steam. There is a size and type for every home heated with radiators. *One of these humidifying radiators centrally located will properly moisten the air in an entire house or individual apartment.*

Beautiful cabinets—Easy installation

Doherty-Brehm Radiator Humidifiers are enclosed in pleasing cabinets in many finishes to harmonize with any interior decoration. Each is both a heating and humidifying unit, simply and quickly installed, and maintained without cost, trouble, or attention.

Easy payments on the CRANE Budget Plan

The Doherty-Brehm Radiator Humidifier is sold by **CRANE** through dependable heating and plumbing contractors everywhere. You can buy it under the Crane Budget Plan and pay ***only 10% down, the rest in small monthly payments.*** Call in your nearby heating and plumbing contractor and tell him to equip your home now.

MAIL THIS COUPON FOR FACTS

DOHERTY-BREHM
Humidifier
CRANE CO.

DOHERTY-BREHM CO.
333 North Michigan Ave., Chicago, Ill.

Please send your instructive booklet about humidity and the Doherty-Brehm Radiator Humidifier.

I have..........rooms in my house.

I have......hot water......vapor ......heat.

Name ....

Address..........................

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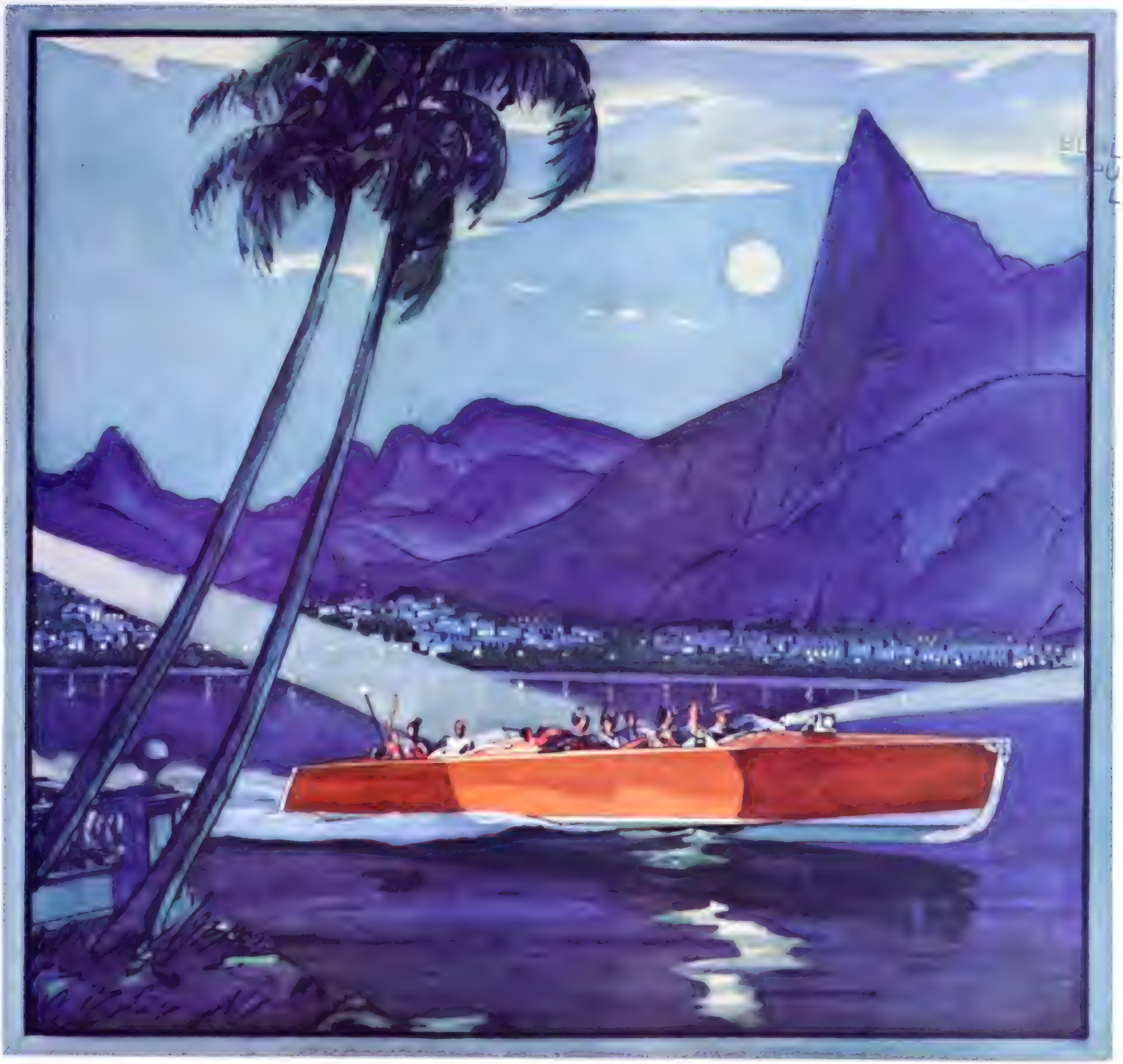

FROM [illegible] Dodge Boats [illegible] Dodge [illegible] Dodge Boats [illegible] Dodge [illegible] Dodge [illegible] of Dodge Boats [illegible]

DODGE BOATS

[illegible]

The Farmer collection of Chinese rarities exemplified in this lamp has been famous for years.

Galleries galore . . . all very wonderful . . . all very much alike . . . all but one, the Edward I. Farmer Galleries. Nowhere in America is there such a find . . . described by the foremost authority as "the largest collection of fine XVII and XVIII Century English furniture in the world." Mr. Farmer has arranged his collection of originals in a series of period rooms so that you may see these precious antiques as he first saw them in historic English homes. He cordially invites you to this unusual exhibition.

Edward I. Farmer, Inc., 16 East 56th Street, New York.

FARMER

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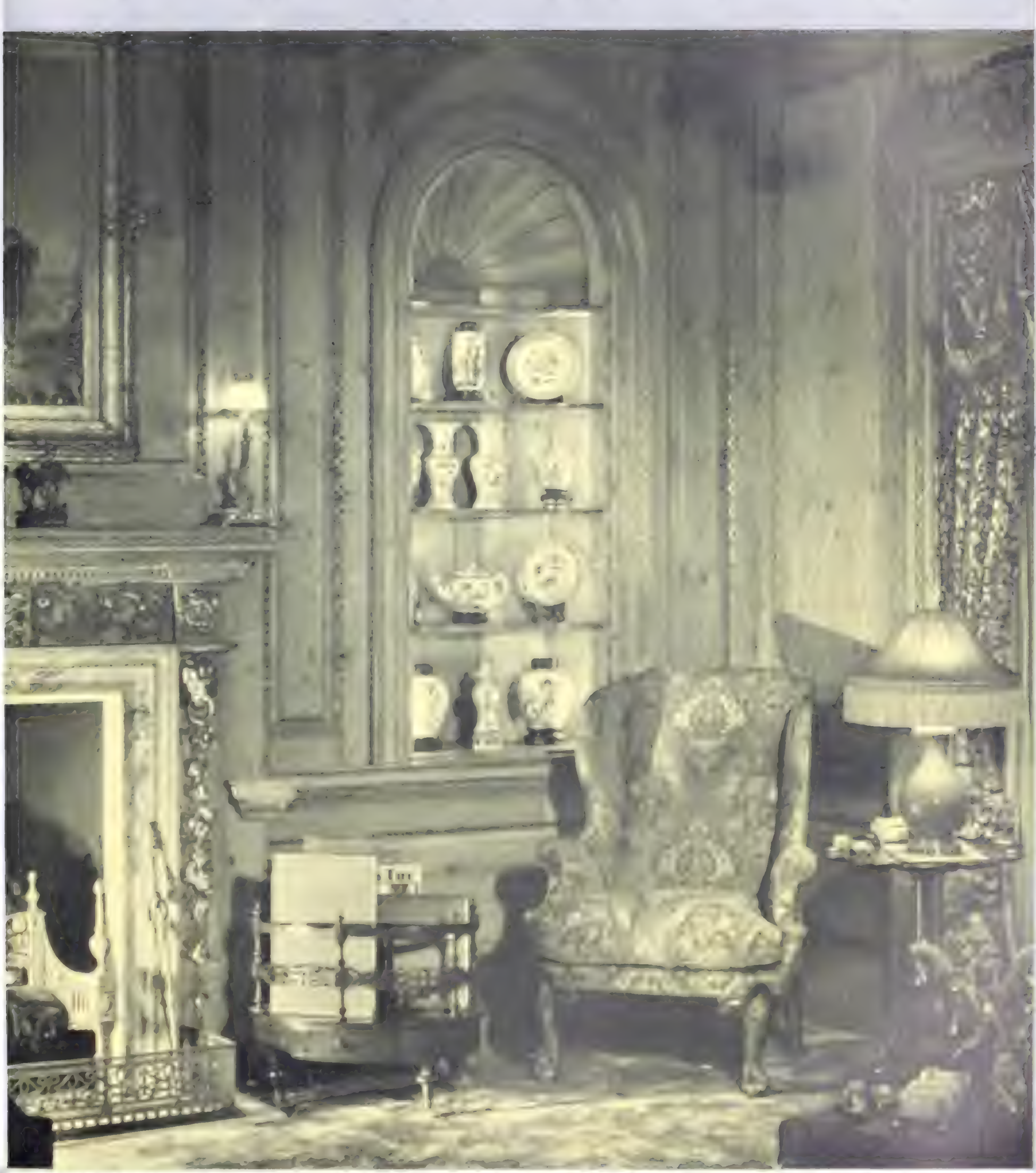

A corner of XVIII Century Pine Room as much admired at the London Olympia Antiques Exhibition in [illegible] — now part of the Farmer Exhibition

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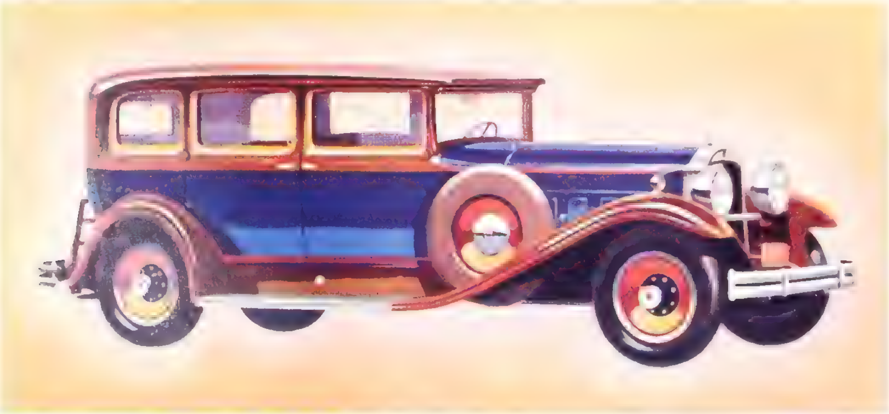
For a Discriminating Clientele

Holbein, foremost of 16th century portraitists, produced his greatest masterpieces as Court Painter to Henry VIII of England. Most of life's finest things have been thus inspired by the understanding and wants of the discerning. It is true of Packard cars of today. For Packard builds only for the market of taste and refinement—supplies the demand for luxurious transportation from those who command the best the world affords

Packard owners everywhere well know that the Packard policy is one of evolutionary improvement rather than revolutionary and needless change. A Packard of yesterday is still a Packard today, in beauty, comfort and prestige—and a Packard of today will still be a Packard tomorrow, powerful, luxurious and altogether distinguished. And so Packard owners, today as always, prefer to keep their cars—just as they keep other cherished possessions through a long and serviceable life—for their many happy associations as well as their continued usefulness. DeLuxe Eight or Standard Eight, the luxury of Packard transportation is so truly complete there is no need or urge for change every year or two. Here lies the true advantage of Packard ownership. You can drive your car far longer, and when you do, you enjoy luxurious transportation without extravagance—in the case of the Standard Eight at costs no greater than for similar size cars of much lower first cost and far less distinction.



PACKARD

ASK THE MAN WHO OWNS ONE

Volume 11

Fortune

Number 5

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for December

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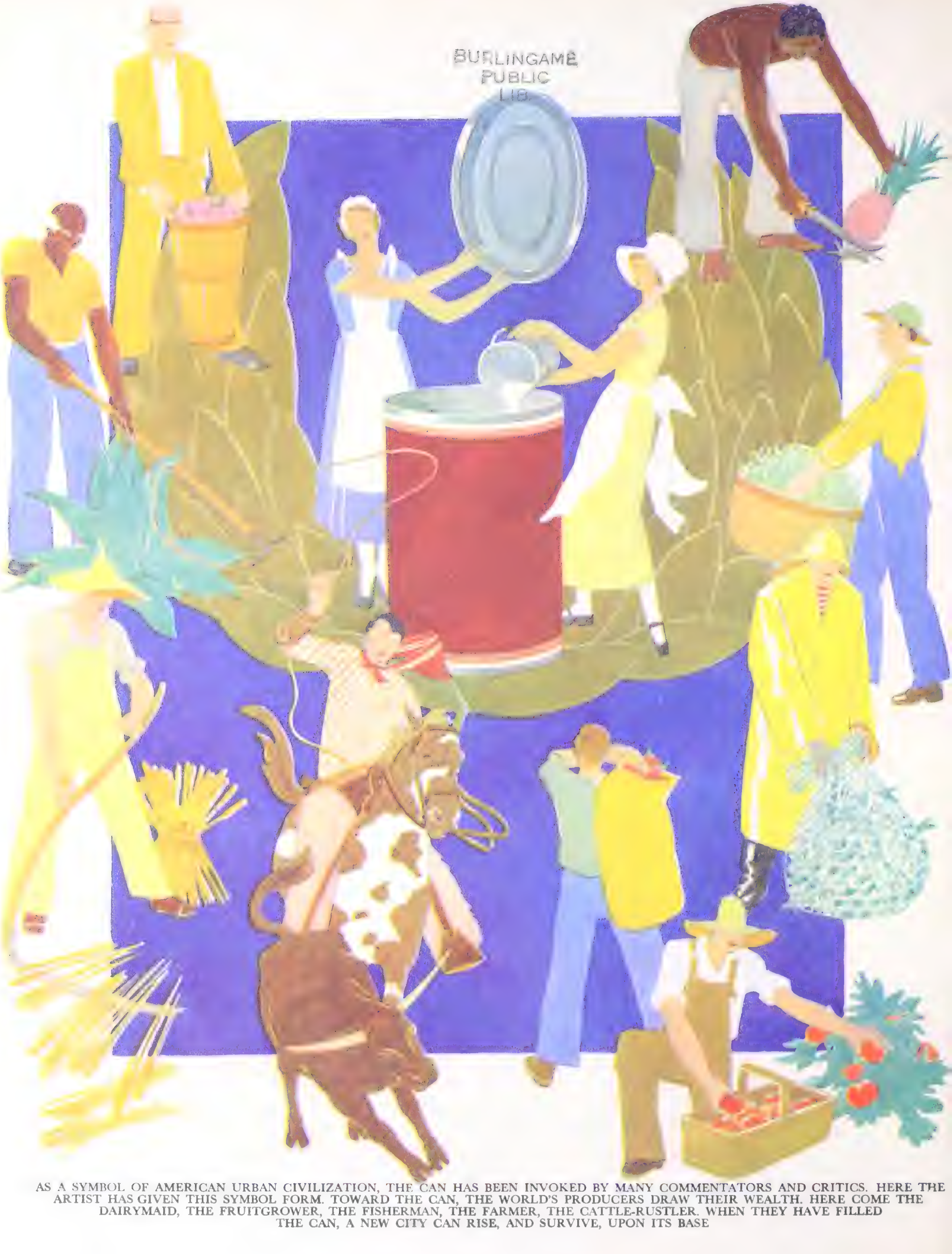

AS A SYMBOL OF AMERICAN URBAN CIVILIZATION, THE CAN HAS BEEN INVOKED BY MANY COMMENTATORS AND CRITICS. HERE THE ARTIST HAS GIVEN THIS SYMBOL FORM. TOWARD THE CAN, THE WORLD'S PRODUCERS DRAW THEIR WEALTH. HERE COME THE DAIRYMAID, THE FRUITGROWER, THE FISHERMAN, THE FARMER, THE CATTLE-RUSTLER. WHEN THEY HAVE FILLED THE CAN, A NEW CITY CAN RISE, AND SURVIVE, UPON ITS BASE

Pineapples in Paradise

How the cactus and the hoodoo disappeared from Lanai. And why Jim Dole traveled 5,000 miles to go into agriculture. The Hawaiian Pineapple Company, Ltd., and its position as one of agriculture's few prosperous exponents. With a note on Hawaii, its missionaries, and their descendants.

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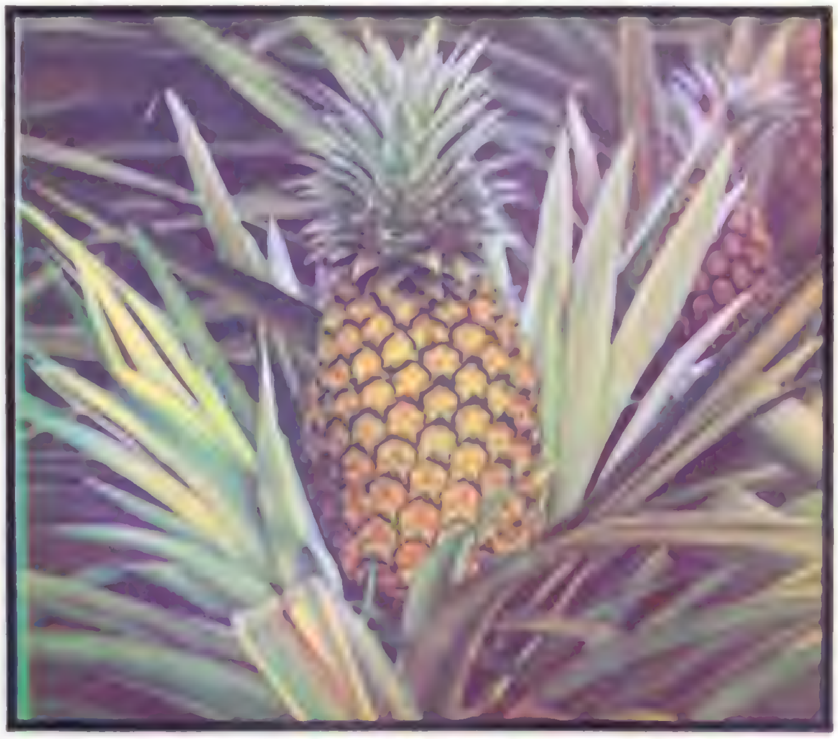
THE Island of Lanai, for some centuries after the volcanic disturbance in which it originated, was considered to be 139 square miles of bad luck. One of the smallest islands in the Hawaiian group (it lies some fifty miles southeast of Oahu, the island upon which Honolulu is located), its chief products were scattered herds of undernourished cattle plus a splendid growth of cactus plants among which a man on horseback could readily lose himself. Its bare, bleak sides rose sharply from the ocean. Its central plateau ended on the east coast in a range of low hills, over which the northeast winds blew steadily for ten months of the year. So strong was the wind that the trees were permanently bowed beneath it, growing with a pronounced spinal curvature in the direction of the Philippines. For month upon month might be no drop of rain, and the few violent squalls which did break over the hills were as short in their duration as they were uncertain in their arrival. Lanai was a jinx, a white elephant, a hoodoo. And when in 1922 the Hawaiian Pineapple Company, Ltd., issued $1,200,000 worth of stock to finance its purchase, many were the observers who shrugged their shoulders and made the trite remark about the preliminary madness of those whom the gods wished to destroy.

The yield of Lanai pineapples is today nearly equal to the yield from the rest of the Hawaiian Pineapple Company's plantations combined. Through the rank growths of cactus plunged tractors, yanking the cactus out by the roots and hauling the *débris* away from the fertile soil beneath. Now the long, thickly clustered rows of "pines" (no good pineapple man ever calls them pineapples) stretch out across the rolling tableland from the hills on the east to the sea on the west, and last year alone were planted 1,000 acres of rich virgin soil—a volcanic earth, chocolate-colored and rich, extending sometimes to a depth of 100 feet. From the fields to the man-made harbor runs a wide, smooth road, along which travel five-ton White trucks hauling two ten-ton trailers, carrying in all a net load of twenty-three and one-half tons of pines. Arrived at the harbor, the pines are hoisted (in eleven and one-half ton lots) on barges, are then tugged to Honolulu, some fifty miles away. During the height of the harvest season (July and August) as much as 13,000 and 14,000 tons of pines are picked and shipped, and within twenty-four hours after it has left its plant, the pineapple is reposing neatly in its tin container, ready for shipment to the Coast.

But remarkable as is Lanai from an agricultural standpoint, it is even more unusual as an example of an industrial city in which the ideal of a company town has been truly realized. In Lanai City, owned, built, and managed by the Hawaiian Pineapple Company, live 3,000 orientals and thirty-two whites in undisturbed harmony. The town is so clean that it is embarrassing to dispose of a cigarette-end. It is so quiet that one might almost take it for a deserted city, and over it hangs a postcard-blue sky with a sun that makes visitors from Los Angeles homesick. There is no contract labor on Lanai. The pineapple picker who wants to quit his job is cheerfully handed his week's wages (from $14 up to as high as $28) and his transportation. Japanese, Chinese, Filipinos, and Hawaiians (with a sprinkling of Russians and some Portuguese imported in a colonization movement from the Azores) live side by side in an association which (partly because of thorough intermarriage) is apparently free from race problems, and battle neither among themselves nor with the whites for whom they work.

The successful conversion of Lanai was not the first example of the Hawaiian Pineapple Company's ability to disappoint prophets of disaster. Even before the company existed, its possibilities were doubted by many a sceptic who argued that sugar had always been and would always be the Island's sole important product. To understand how and why the Hawaiian pineapple business has grown to the point at which the 1930 valuation of the pineapple crop on Oahu was greater than the valuation of the sugar crop (though sugar is still the leader for the islands as a whole), it is necessary to travel thirty years back into the past and to a spot on the earth's surface some 5,000 miles away from Honolulu. For the growth and prosperity of the Hawaiian pineapple were almost entirely the work of one man, and this man—Mr. James D. Dole, president and general manager of the Hawaiian Pineapple Company—is still the active head of the company he founded. Mr. Dole does not now grow all (or even a majority) of the pineapples produced in Hawaii, yet the industry is almost uniquely a one-man job. It is certainly fair to say that the pineapple business began in 1899 and in that suburb of Boston, Massachusetts, which is known as Jamaica Plain.

For it is from Jamaica Plain that Mr. Dole comes, and it was in 1899 that he came a long way from it. From very early years Mr. Dole had wanted to be, as he says, an agriculturalist. He thought of agriculture in terms of broad



A PINEAPPLE

. . . which multiplied by [illegible] will equal the 1930 crop of Jim Dole's pineapple company. But [illegible] pineapples fill [illegible] cans.

fields and spreading acres, on a scale not compatible with New England's rocky and long-tilled land. During his school (Roxbury Latin) and college (Harvard) days he ran a small vegetable garden in Maine. And after graduation, when he was again taken with the old agricultural urge, he turned finally toward the fertile and expansive acres in the West. Long and tiresome as was the journey to Honolulu and homesick as he was on the way, he had an intimate and personal interest in Hawaii. For in Honolulu lived Sanford B. Dole, who was his father's first cousin, and it was this same Sanford B. Dole who had headed Hawaii's Revolution of 1893 and on July 4, 1894, had taken oath of office as President of the Hawaiian Republic.

At first, Mr. Dole found the Paradise of the Pacific something less than heavenly. The climate, to be sure, bordered upon perfection, and even Mr. Dole's hay fever no longer troubled him. But agriculture was disappointing. Mr. Dole had started out with a vague notion of growing coffee. The annexation of Hawaii and the war with Spain had made the U. S. Pacific-conscious, and vivid propaganda had been circulated concerning Hawaii's agricultural prospects, especially with regard to coffee. Nor was this propaganda entirely fictitious—in the Kona district on the Island of Hawaii there is grown today a considerable quantity of exceptionally fine coffee. But it is only in this one section that coffee much flourishes, and Mr. Dole's dreams of a coffee plantation rapidly vanished. There was really only one industry in Hawaii. That was sugar. Sugar in Hawaii averages from five to eight tons per year per acre, and up to eighteen tons. (The average Cuban yield is two and one-fourth.) The sugar industry had begun in 1802, and nearly all the land under cultivation was devoted to it. Pineapples were hardly thought of. Everybody had a sweet tooth, but a pineapple tooth was something very different.

So thought sugar men, with a good deal of sense, though without realizing the strength of the rebuttal argument. Thanks chiefly to the sugar business itself, the Islands were supplied with ample shipping facilities, and plentiful was Japanese and Chinese labor. It was true that the States, 2,000 miles away, were the only market and that any pineapple industry would necessarily be a canned pineapple industry. But pineapples have never been grown extensively in California, Florida, or any other portion of the States. Nor does the pineapple (unlike the banana, for instance) ripen after it is picked, so that the green fruit, picked green, is still unripe when delivered. So far as competition with Cuban or South American pineapples was concerned (the pineapple is a native of South America), fresh pineapples have never been a serious factor in the pineapple business, and canned pineapple might as well come from Hawaii as from anywhere else.

Not that Mr. Dole knew anything about pineapples. Back East he had learned that you should put lime on acid soil to neutralize the acid. So he put lime on a pineapple field with the result that no pineapples grew in that locality for some seasons, because pineapples require the very acid that the lime is designed to offset. Neither did he know anything about canning. He went all the way back to Maine to get a cannery man—Mr. John L. Whitmore, now vice president and second in command. And even Mr. Whitmore's canning experience related chiefly to fish, and it was as plantation manager that he finally found his place in the pineapple scheme.

Capital, too, was conspicuously absent. Nepotism is no New England trait, and Mr. Dole's influential connections represented hardly more than moral support. The Hawaiian Pineapple Company, Ltd., incorporated in 1901, was for some time richer in stock than in money. Mr. Dole paid supply bills with stock. Employees collected wages partly in stock, partly in cash. At one point Mr. Dole went back to Boston, sold stock, printed a prospectus for which he paid the printer one share ($20 par). It was the sale of a considerable quantity of this stock to a San Francisco wholesale grocer which finally enabled Mr. Dole to proceed without fear of bankruptcy. After that the business was largely a question of getting more land, raising more pineapples, then getting more land and raising more pineapples. From 1,893 cases in 1903, the annual pack went to 8,810 cases in 1904, to 25,000 in 1905, and in 1907 passed the 100,000 case mark. The pack reached 500,000 cases in 1912, 1,000,000 in 1918, 2,000,000 in 1923, 3,000,000 in 1926, and from 3,247,204 cases in 1929 will pass 4,000,000 during the present year.

Today pineapples and Mr. Dole are more than prosperous. The Lanai development represents, in addition to the original price, an investment of eight years and at least $4,000,000, and stands as the most remarkable individual achievement in the Hawaiian Pineapple Company's record. Once Mr. Dole had demonstrated that pineapples could be profitably grown, his footsteps were enthusiastically followed. There are nine chief pineapple growers, who this year will pack about 11,300,000 cases, nearly all of which will go to the U. S. and there wholesale for some $45,000,000. Estimated 1930 production (in cases) of the largest of these producers is as follows:

California Packing Corporation	*2,500,000*
Hawaiian Pineapple Company, Ltd.	*4,100,000*
Libby, McNeill & Libby of Honolulu, Ltd.	*3,000,000*

These growers, with six smaller companies, belong to the Association of Hawaiian Pineapple Canners, conduct jointly a research bureau (to which the American Can Company also contributes), but are otherwise independent and competitive. Hawaiians themselves are very proud of and well disposed toward the pineapple business, since it not only preserves the islands from being almost entirely dependent upon the sugar industry, but is also an excellent world-wide advertisement. Sugar purchasers do not know or care where their sugar comes from; pineapple purchasers usually associate the islands with the product. Thus Mr. Dole is a greater islander than any sugar tycoon, and no booklet on what to see in Hawaii is complete without an exhortation to visit the Dole cannery.

CACTUS ON LANAI

Lanai's cactus production was another reason why Lanai was good for nothing. But the soil beneath was as good for pines as for cactus. And where the cactus grew, grow pines today.

The cannery is indeed difficult to avoid seeing. One of the first objects beheld by the traveler rounding Diamond Head, famous and fortified outpost of Honolulu's harbor, is an enormous pineapple apparently hanging over the city and suspended from the sky. It is in reality a 400-ton watertank on the cannery roof, but the outside is shaped and painted to resemble a pineapple and what it may lack in esthetic merit it unquestionably possesses in publicity value. During the height of the pineapple season (July and August) some 4,000 workers, operating on a double shift, can 1,000,000 pineapples in twenty-four hours, the record day to date (July 7, 1930) standing at 1,269,709 pineapples or slightly under 100,000 cases. A battery of shelling machines (developed in the Dole cannery, now used by all pineapple canners) takes off the pineapple's skin and punches out its core in a single swift and noisy operation; a set of knives guillotine the skinned and cored cylinders into neatly equal slices, and in some ten seconds from the time the pineapple enters the cannery it is skinned, cored, sliced, and ready for grading and canning. The shells travel to the by-products department, chief by-products being pineapple juice (in which the pineapples are canned with added sugar) and citric acid (sold to make citrate of magnesia). After the recovery of juice and acid, the solid material still remaining (the pineapple is 98 per cent juice and only 2 per cent fiber) is sold as a cheap and nutritious food for horses, cows, and pigs. In the early days of the pineapple business, the skins were piled up outside the cannery in an odorous pile which attracted unfavorable attention from Hawaii's Board of Health, but today the citric acid production alone is of sufficient importance to have justified the erection of a $250,000 acid-recovery plant now under construction. Odd are the ramifications of an agriculturist—Mr. Dole, beginning as a grower of pineapples, operates the world's largest fruit cannery under one roof as well as a chemical and fodder business of considerable size.

· · ·

Thus Mr. Dole and thus his company. It is not tremendously large—gross sales for 1929 were $15,201,487—but it is extremely profitable. The 1929 profit was $3,166,308, equal to 20 per cent of gross. A regular 10 per cent dividend, plus a 2½ per cent extra, plus (on January 2, 1930) a stock dividend of 20 per cent, made 1929 a profitable year for stockholders. But good years are common in the Hawaiian Pineapple Company's history. From 1911 through 1924 dividends (on the $20 par stock) varied from 15 per cent to 23

A PINEAPPLE PLANTATION

This is what Mr. Dole meant when he said he was interested in agriculture. Now he is interested in canning and chemistry, too. But his growing plants, in fields such as this, are carried on his books at a valuation of $[illegible]. Each pineapple plant has a cycle of three or four bearings.

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per cent; since then they have ranged from 9 per cent to 12½ per cent. Furthermore, the company has always been conservatively financed. Its original capitalization consisted of 1,000 shares; there are at present authorized 750,000. In thirty years, it has increased its capitalization twenty-six times, including four issues of rights at par and nine stock dividend declarations. The printer who got the single share of $20 stock for printing Mr. Dole's prospectus would today, without an additional investment and benefiting solely from dividend declarations, have over twenty-five shares with a value of around $1,200. There is no funded debt, and in 1929 the company, besides paying $1,557,308 in dividends, added to its surplus about $1,600,000. The consumption of pineapples (in the U. S.) amounts to only a trifle more than two pineapples per person per year; thus the industry would seem to be underproduced with its saturation point comfortably remote. Conservative and far-sighted, Mr. Dole has always worked in harmony with his wholesalers, has never tried to ram down their throats the Dole brand or the Dole name. Most of his cans have "Dole" on the top of the can, plus the distributor's name on the label.

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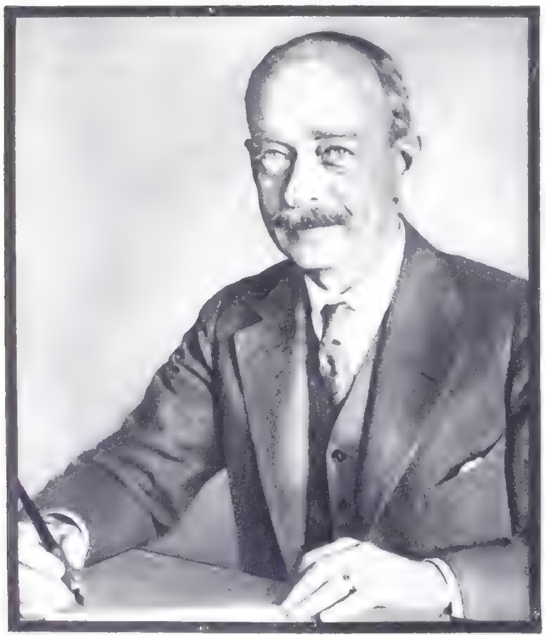
BURLINGAME PUBLIC

THE PARADISE OF THE PACIFIC

. . . in one of its most celestial aspects. The Hawaiian Islands are a volcanic formation; their mountains, steep and jagged, are split into many multi-colored chasms, gorges, and canyons.

Mr. Dole would have made a good schoolmaster had he stayed back in Boston. He is long and lean and very New England and evidently sprung from the stock that sent the clipper ships to the ports of Japan and of China, that sent also missionaries to carry the word of the Lord to distant and heathen regions. His children go to America, or rather (as the Hawaiians, jealous of their position as an integral portion of the States, say) to "mainland" colleges, and he himself gets back to the mainland for at least a visit a year. This use of the word mainland to designate a continent some 2,400 miles from Honolulu may seem like an affectation, but it actually expresses a very fundamental truth about Hawaii, a truth seldom understood by the outsider. Hawaii is not at all a tropical country. Its climate is very similar to the climate of California: Honolulu, for instance, is closely akin to San Francisco or to Hollywood and entirely different from Manila or Singapore. There are no tropical helmets, no siestas, no snakes or other instances of jungle life, no equatorial overtones. It is true that the population is largely foreign; that of the 300,000 inhabitants, probably 150,000 are Japanese and a considerable portion of the remainder are Chinese, Filipino, and Hawaiian. There are hardly any pure Hawaiians left (not more than 21,000), and the oriental population on the whole is so inextricably intermarried that pedigrees have become extremely obscure. For this very reason, however, the various nationalities exhibit surprisingly little nationalism.

There is a great deal of local color in Hawaii, and it is moreover sufficiently genuine. Thus, while it is somewhat disconcerting to



P. & A.

HARRY A. BALDWIN

Great sugar man from great sugar island of Maui. And head of Maui Telephone Co.

LORRIN A. THURSTON

The publisher of the Honolulu *Advertiser*. Mr. Thurston is wearing an assortment of leis.

Keystone

JAMES D. DOLE

Who grows and cans pineapples, drives a Lincoln, likes golf large and golf miniature.

LANAI CITY

. . . or the kingdom of H. Blomfield-Brown. A city without a factory, a furnace, or an umbrella. Five days from San Francisco, five hours from Honolulu. And so quiet that the pineapples can almost be heard growing. Police chief, prohibition enforcer, postmaster, and general ruler is H. Blomfield-Brown, Australian-born American citizen who once spent two years at the foot of the Himalaya Mountains and saw no other white man. Genial, hospitable, skilled in the handling of orientals, Mr. Blomfield-Brown is well pleased with his kingdom, travels seldom even to near-by Honolulu.

discover that the first ukulele arrived in 1880 from Portugal (ukulele means "flea" in Hawaii), there is now no question but that the ukulele is the national musical instrument. And, although the first Hawaiian song was written about 1860, here again the importation was so enthusiastically adopted that the song *Aloha* (more properly *Aloha Oe*) was composed by no less thorough an Hawaiian than Queen Liliuokalani, last native ruler. It is only fair, therefore, to concede that the ukuleles and the leis and the hulas and the cocoanut palms are an integral part of the Hawaiian scene, and no matter if it is a century and more since the warriors of old King Kamehameha, first lord of a united Hawaiian land, came up from Hawaii Island and swarmed over Oahu, the scene of his conquests has not much altered and the breakers are still white and long upon Waikiki Beach.

After all, Hawaii is a thoroughly American country, would probably be a state instead of a territory except for the interesting probability that statehood would result in a pair of Japanese Senators. What might be termed the management group in the islands is composed chiefly of the descendants of missionaries. The first missionaries arrived in Honolulu in 1820 and rapidly converted the islanders. The conversion was materially aided by the belief of the islanders that their true religion had been lost and that some day it would be brought back in a square box. Thereupon the missionaries explained that the square box was nothing other than the Bible and thus made rapid headway. They also became extremely influential with the native rulers, chiefly because they were so different from the crews of whaling vessels which often put in at Honolulu and from which came a devastating plague of liquor and venereal diseases. Siding with the natives against the sailors, the missionaries won the gratitude of the royal house (the Kamehameha dynasty), and when the ancient *régime* was finally overthrown, the missionaries and their descendants found themselves virtually the governing and also the landed class. Today nearly every Hawaiian first family has a missionary in its tree.

There is, for instance, the Baldwin family, big sugar men on Maui, big sugar island. Present head of the family is Harry A. Baldwin, president of Maui Agricultural Co. (sugar), Maui Telephone Co., and Maui Publishing Co. Father of Harry A. Baldwin was Henry Perrine Baldwin, who with his partner, Samuel Alexander, was a pioneer in the development of Hawaiian sugar, still greatest Hawaiian staple. And father of Henry Perrine Baldwin was the Reverend Dwight Baldwin, who came to Honolulu in 1831 with the fourth company of New England missionaries. The Thurston family, too, is another excellent example of the missionary influence

Keystone

LAWRENCE M. JUDD

Hoover-appointed Governor of Hawaii. Also a Shriner and potentate of Aloha Temple, Honolulu.

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WILLIAM R. CASTLE JR.

Able Assistant Secretary of the U. S. Department of State, in Charge of European Affairs.

P. & A.

WALTER F. DILLINGHAM

Five homes, many polo ponies, much hospitality. Builds railroads, harbors, and public works.

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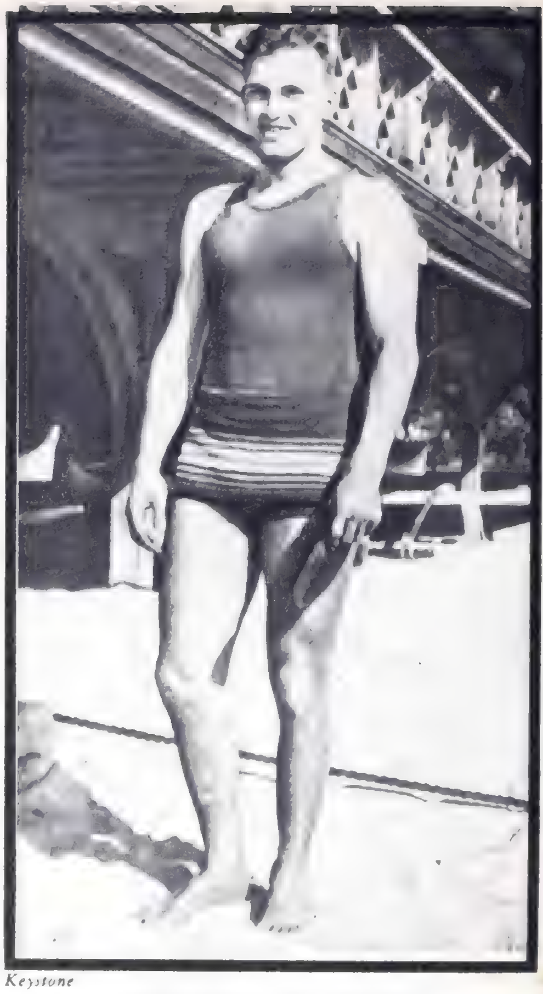
In 1820, the Reverend Asa Thurston arrived on the brig *Thaddeus* (the *Mayflower* of Hawaiian society), a member of the first missionary band to reach Hawaii. His grandson, Lorrin A. Thurston, served in the Honolulu congress during the reign of King Kalakaua, was a member of the Hawaiian House of Nobles, figured prominently in the Revolution of 1893, and today (at the age of seventy-two) is publisher of the *Advertiser*, leading Honolulu newspaper. His son, Lorrin P. Thurston, Yale graduate and one-time captain of a Yale swimming team that traveled to Honolulu and startled the natives by defeating their best swimmers, is now employed on the *Advertiser* staff.

Not quite as old as the Baldwins or the Thurstons, yet leaders in the Hawaiian hierarchy, are the Castles, Samuel N. Castle, missionary, having arrived on the barque *Mary Frazier* in 1837. Together with a fellow missionary, Amos Star Cooke, he founded the firm of Castle & Cooke, early sugar factors, shippers, and planters. Among the ten children of Samuel Castle was James Bicknell Castle, who branched out into many Hawaiian industries, notably the construction of Honolulu's street car system. There are now many third generation Hawaiian Castles, including William R. Castle Jr., who has written an excellent history of Hawaii and who is now Assistant Secretary of State in Charge of European Affairs.

Chief exception to the missionary strain is the Dillingham family, its founder, Benjamin Franklin Dillingham, reaching Honolulu as first officer of the barque *Whistler*, a merchant vessel trading between Honolulu and the Pacific Coast. While on shore leave, First Officer Dillingham went horseback riding, was thrown, fractured his leg, and remained in Honolulu while the *Whistler* went back to the coast. After his recovery he remained on the island, married a missionary's daughter, and went into business with one of the sons of Samuel Castle. It was Benjamin Dillingham who built the Oahu Railway, connecting Honolulu and its harbor with the back country and making possible the large scale development of Oahu sugar. Son of Benjamin Dillingham is Walter Francis Dillingham, perhaps greatest of the contemporary Hawaiian tycoons. Mr. Dillingham took over his father's enterprises in 1904, saw them through to a successful conclusion, and in addition developed the Hawaiian Dredging Company, which dredged and dry-docked Pearl Harbor, the great Hawaiian naval base, and also built Mr. Dole's harbor at Lanai. A Harvard graduate, a polo enthusiast, a man to whom nearly every official and many an unofficial visitor to Honolulu has letters of introduction, Mr. Dillingham has held or holds nearly every civic and industrial honor offered in Honolulu. Generally speaking, however, it was the missionaries and not the sailors who shaped Hawaiian affairs during their formative period, and the descendants of missionaries control the island today. Thus Governor Lawrence Judd, Hoover-appointee, is the grandson of Dr. Gerrit P. Judd, medical missionary to Hawaii in 1828, and the son of Albert Francis Judd, who was Chief Justice of the Hawaiian Supreme Court during the monarchy, the republic, and up to the beginning of the territorial period.

Into this New England clerical tradition Mr. Dole fits excellently well. His father and grandfathers, if not missionaries, were at least clergymen, and old Judge Dole was of course in a direct missionary line. Mr. Dole has a great deal of extremely justifiable Hawaiian local pride and will tell you, for instance, that New York is hardly a fit place for human beings to inhabit. Recently he spent a week at the Biltmore and never could see the Chrysler tower through rain and dirt and fog. But Hawaii has become so thoroughly Americanized that it is the few remaining natives who seem forlorn and foreign. And Mr. Dole is as much a New Englander as if it were Cape Cod rather than Diamond Head that guarded his city or as if corn rather than pineapples blossomed on his acres. It is regrettable that pineapples do not grow in Boston or Maine. But Mr. Dole has, in effect, brought Boston and Maine out to Hawaii with him.


Keystone

LORRIN P. THURSTON

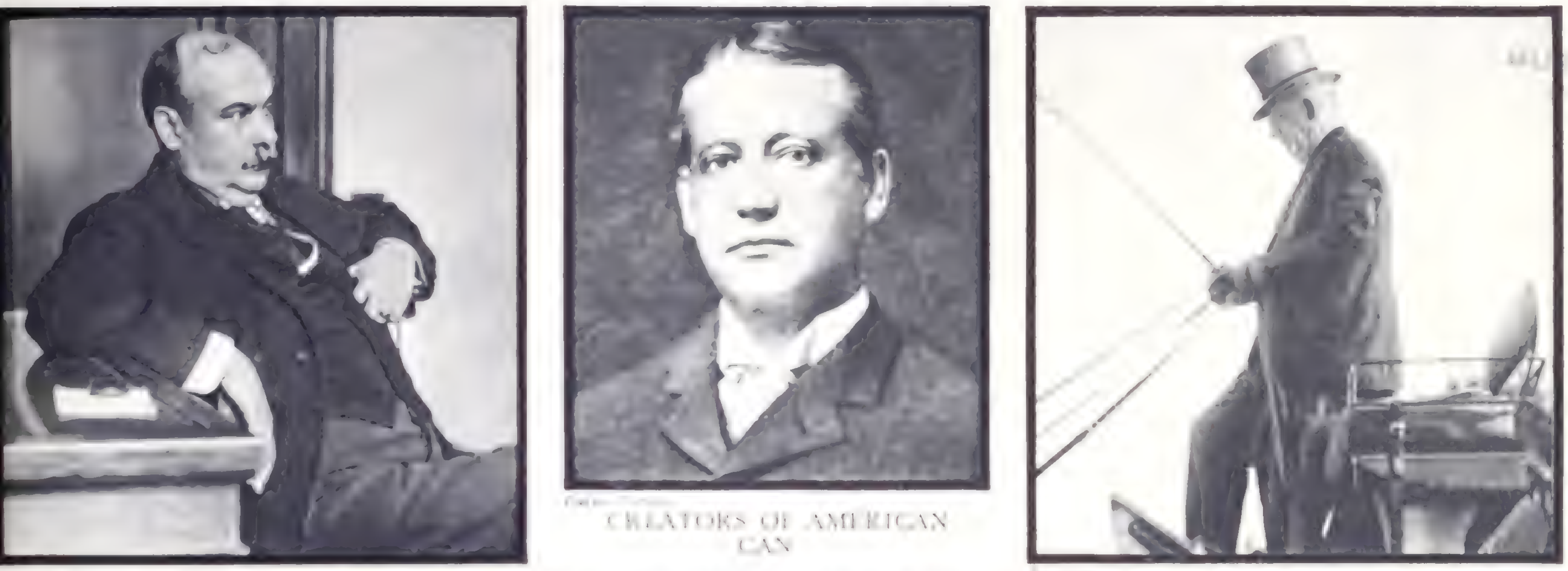
Son of Publisher Thurston; his Yale swimmers were speedier than native Hawaiians.

OFF THE PLANT

. . . then off to the cannery, then off to the mainland. Virtually the entire output of Hawaiian pineapples goes to consumers who are from 2,000 to 5,000 miles away.

The American Can Company

Mirrored in its dramatic thirty-year evolution is the whole trend of American industry; is also the strange phenomenon whereby our cities rise upon foundations of cans; is also the change in industry's personnel from the adventurers to the administrators; is also the march of technical advance, forever substituting new for old.


CREATORS OF AMERICAN CAN

FROM LEFT TO RIGHT, DANIEL G. REID, WILLIAM B. LEEDS, AND WILLIAM H. MOORE. THESE MEN, WITH TWO OTHERS, IN 1901 PUT TOGETHER THE LAVISH, RECKLESS TRUST WHICH IS TODAY THE SUBSTANTIAL, LAW-ABIDING, HIGHLY SOLVENT AMERICAN CAN COMPANY

THE American Can Company does not talk about itself.

Nevertheless, there adheres to it (as to any large corporation) a cluster of fact plus a cluster of estimate, opinion, and rumor.

Some Can facts are matters of public record. Its most important published statement is its net income, which was $22,724,800 in 1929; $19,863,300 in 1928, and $13,055,200 in 1927. Its most recently publicized activity was its entrance into the British can-making field. In July, 1930, it organized British Can Shares, Inc., to hold shares in British Can Co., Ltd., large British canmaker. The Can Company, moving against the industrial trend, also declared an extra dividend of $1.00 in September of the present year.

Otherwise, what is published about Can is largely routine. Its home is at 230 Park Avenue, Manhattan. It has fifty-three plants in forty-five cities, farthest flung plant, in Honolulu, making cans for Dole, Del Monte, and Libby pineapples. It is traded in on the New York, the Chicago, and the Amsterdam stock exchanges. It values "land, buildings, equipment, etc." at $127,274,907; it has total assets of $191,335,614 and a surplus of $62,111,831. For several years it has put more money back into surplus than it has paid out in dividends, and in the last three years it has invested $24,000,000 in its building program. Chairman F. S. Wheeler and President H. W. Phelps have been with the company since its organization in 1901. Its distinguished directorate includes Herbert L. Pratt of Standard of New York and E. E. Loomis of the Lehigh Valley Railroad. Its common sold last year up to $184½, and its turnover of more than five times the number of shares outstanding ranked it close up to Radio Corp. as bull market favorite.

It does not publish sales or gross income figures. It issues annual statements only. It is undeniably largest can-making concern, with Continental Can second, but how many cans it makes or what proportion of the business it does are matters of deep obscurity. Conservative estimates, however, are that American makes about 30 per cent of U. S. cans and that it is at least twice as large as Continental. It was organized (in 1901) as a merger of a majority of all can-making companies, and for some years was popularly known as the Tin Can Trust. Today it is a conservative, soundly established highly profitable corporation occupying in the making of cans somewhat the position occupied by U. S. Steel in the making of steel. Like U. S. Steel, it is not a monopoly, it will never again be a monopoly, and for the greater part of its life it has seen its percentage of the can-making business diminish. It represented the violent disturbances of an equilibrium which is still reasserting itself. But from this restoration of the normal order, no one has more profited than the Can Company. Its promoters have long since gone to a reward not associated with the securities of merged companies. Its financial policy has altered from the extremely radical to the ultra-conservative. It is deservedly popular with the canning industry, to the advancement of which it has notably contributed. In its first year, as the Tin Can Trust, it made $1,775,564. Last year, in a fair and competitive field, it made $22,724,802. This comparison must be weighted with the realization that the can business has expanded tremendously during the past thirty years, as the harsh demands of an increasingly urban civilization have compressed nearly every perishable product into the safety of tin plate. Yet the company of today is making much more money on a much sounder basis than the trust of yesterday. It is probable that if the money spent in the illegal formation of the monopoly had been invested in a more legitimate expansion during the same period, holders of Can securities would have gained at least as much profit without undergoing nearly as many gray hairs. But the group of promoting insiders would not have added so quickly to their wealth.

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And the American Can Company is a splendid example of high-pressure promotion. Its formation was very much affected by the circumstance that tin cans are not made of tin. They are made of tin plate, which is steel with a thin coating of tin. The tin plate industry is (and was) an important branch of the steel industry, and the tin can-maker is (and was) by far the greatest user of tin plate. Thus a simple and logical form of steel integration would be an association between a can-maker and a tin plate-maker, and indeed the Continental Can Company today has a tin plate subsidiary and the McKeesport Tin Plate Company has a tin can subsidiary. Remembering that the American Can Company was formed during the great steel integration period culminating with the formation of the U. S. Steel Corporation, it is not surprising to find that its organization was partly a move in the steel merger. Indeed, there is reason to believe that the Can Company was put together with the express purpose of combining with the Steel Corporation and that the failure of this combination to materialize was a disappointment to its founders and stockholders. The Can story and the Steel story run so closely parallel that it becomes very difficult to discuss the formation of Can without getting into the much more complicated and far-reaching discussion of the formation of Steel.

For the backers of American Can were also the backers of National Steel, of American Sheet Steel, of American Steel Hoop, and of American Tin Plate, all of which (as everyone knows) were organized just prior to the formation of U. S. Steel and became charter members of that great company. There were five prime Can movers. One, Edwin Norton, was a can-maker. The four others were promoters. They were William H. (Judge) Moore; J. Hobart Moore, brother of the foregoing; Daniel Gray (Czar) Reid; and William B. (Tin Plate) Leeds. Leader of the quartet was Judge Moore. Originally an Easterner (there is a Moore Chemistry Laboratory at Amherst), he went to Chicago, married well, practiced law (hence the legal title), and finally, with his brother, abandoned law for organizing. His first notable promotion was Diamond Match; to him also the National Biscuit Company owes its origin. But it was in the steel business that he made his greatest reputation and profit. By 1898 it had become evident that the steel industry was on the verge either of a great war or a great peace between Federal Steel (J. Pierpont Morgan) and Carnegie Steel (Andrew Carnegie). Golden was the opportunity for the promoter who could combine steel units not identified either with Federal or with Carnegie. And quick was Judge Moore to seize it. With his brother and with Messrs. Reid and Leeds ("Two little boys from Indiana," as Mr. Reid used to speak of himself and friend), he organized what would today be spoken of as the Moore Interests. Consisting of the (already mentioned) National Steel, American Steel Hoop, American Sheet Steel, and American Tin Plate companies, the Moore group was the third largest steel consolidation, producing 12 per cent of ingots, 70 per cent of sheet steel, and 90 per cent of tin plate. The companies were all heavily capitalized, and the promoters' commissions amounted to more than $20,000,000 of stock. So when, in February, 1901, the U. S. Steel Corporation was organized and absorbed the Moore group, the Moores and their associates traded steel stocks for Steel stock and became notably affluent.

Looking back upon the Can organizers, especially looking back across a period of years notable for the decline of the monopoly movement and for an increase in industrial social consciousness, Mr. Moore and his friends appear rather more picturesque than profound. From a sober economic standpoint, they spent their time in perpetually painting the town red. One thinks of Dan Reid and Billie Leeds ordering $250,000 of tin plate machinery on the day following the promulgation of the McKinley Tariff, with its protective duty on tin plate, or of the same Dan and Billie startling old Andrew Carnegie by offering him $1,000,000 for a ninety-day option on his holdings in Carnegie Steel. Or of Mr. Reid's gay parties or of Judge Moore's stable of seventy fast horses or his even more famous fur coat, which cost $19,000 and was the most expensive garment worn by any U. S. male. Or of J. Hobart Moore retiring to Glenwood Springs, Colorado, to take cave baths. "The Big Four from the Prairies," they were called, and it was said that not for years did J. Pierpont Morgan forget the price which they extracted for their contributions to the steel merger. Yet it would be a mistake to consider them merely industrial playboys. Judge Moore, for example, was a director of the First National at a time (1902) when its directorate included also James J. Hill, George F. Baker Sr., and J. Pierpont Morgan. He left an estate of $24,000,000; he left also a group of combinations (such as Diamond Match, National Biscuit, and American Can) which have remained of outstanding importance in their industries. Mr. Moore and his friends wound up companies and ran them (frequently at a hazardous velocity) like small boys playing with toy trains. But they were not really toy trains, and many of them have continued to run long after the departure of their creators.

This, briefly, was the background against which the American Can Company went through its formative period. The Can Company was put together in much the same manner that the Moores had rounded up the sheet steel companies and that Mr. Reid and Mr. Leeds had corralled the tin plate-makers. When operations began (late in 1899), there were about 175 can-making companies, none of which were national, hardly even regional, in scope or importance. One of the largest individual companies was, however, Norton Bros., and Edwin Norton, its president, was selected to look after the actual physical formation (by purchase) of the trust structure. And Mr. Norton did one of the very best jobs in monopolizing history. In from six to eight months after he had begun securing options on can properties, the American Can Company

Ewing Galloway

THE TIN PLATE STEPS

. . . upon which urban America can climb to its fifth-floor tenement flats and its fiftieth-floor penthouses. These are the city's excellent substitute for fresh peaches, canned by Libby, McNeill & Libby.

was in existence as a merger of ninety-five can-makers, and within sixty days after its organization (March, 1901), twenty-eight additional concerns had come into the fold. Excluding canners who made their own cans, the companies forming the American group produced more than 90 per cent of the entire can output, and no company of major importance remained outside the organization.

Mr. Norton must have been an excellent persuader thus to assemble nearly an entire industry in less than a year's time, but his accomplishment was perhaps more thorough than extraordinary. The period was the high noon of the monopolizing impulse; many a small independent was well satisfied to sell out to the trust former, and many another was afraid to remain out by himself. The relationship between the Tin Plate Trust and the proposed Tin Can Trust was perfectly obvious and universally realized, and the possibility that the can-maker who did not join the Can Trust would have a difficult time buying tin plate was one compelling inducement. As a matter of fact, the Can Trust did make a preferential agreement with the Tin Plate Trust, although the two companies did not work together as closely as might have been expected, since by the time American Can was actually organized, Tin Plate was a portion of the Steel Corporation, and Mr. Morgan and his associates did not approve of anything in the nature of trade discrimination. But before Tin Plate joined the Steel Corporation, the position of Tin Plate as a near-monopoly controlled by the Moore management and the prospective position of American Can as a near-monopoly controlled by the Moore management must have been extremely suggestive. Furthermore, Mr. Norton collected, in addition to can-making companies, companies that made can-making machinery and was known to be negotiating with other machine shops for either preferential or exclusive supply contracts. The independent who was not sure of being able to buy raw material on a fair basis was equally unsure concerning the chance of getting machinery in anything like an open market, and as a matter of fact the Can Company after its organization did pay one of the largest can machine makers the sum of $100,000 per annum to sell to American Can its entire output of certain can-making machinery and also to waive certain disputes concerning patents. Thus the Tin Can Trust, in addition to a dominating manufacturing position, seemed likely also to enjoy at least a marked advantage with respect both to machinery and to material.

Yet, in fairness to Mr. Norton, it should be added that the Can Company was not assembled chiefly through any coercive process. Mr. Norton's success resulted primarily from his being willing to pay can-makers from one and one-half to twenty-five times the replacement value of their plants. There was never a more generous purchaser than Mr. Norton. One can-maker got $500,000 cash for a plant in which he had originally invested $70,000. Another can-maker built a $16,000 plant, and before he had ever made a single can in it, sold out for $80,000. As one discussion of the Can-forming period puts it: "The ratio between the real value (of properties purchased) and the price named depended more upon the nerve and the impudence of the seller than upon any estimate of the property's probable worth to the new combination." According to later government estimates, Mr. Norton's shopping trips resulted in an expenditure of about $25,000,000, probably twice as much as it would have cost him to have bought land and built and equipped factories capable of producing many more cans at much less cost per can. One of the strongest evidences that Mr. Norton was not interested in expansion but in elimination was that within two years of Can's organization, it had shut down eighty-four of its 123 factories—an extreme instance of "concentration" which is difficult to explain on any basis other than the theory that dead lovers are faithful lovers. Can-joiners were also required to sign an agreement not to reënter the canning business, within 3,000 miles of Chicago, for fifteen years. One can-maker, offered $300,000 for his plant, refused so to commit himself, whereupon the purchase price was increased to $700,000 and the reëntrance prohibition was accepted. It would therefore appear that nearly all the independents who sold out to American made themselves a most profitable bargain and emerged from it with no complaint.

But of course it was not Mr. Norton's money that was being so generously distributed, and in the long run it was not exactly Mr. Moore's either. Most of the sellers took part or all of their payment in stock of the projected company, and the spectacle of a can-maker who had not yet made any cans selling his business for stock in a company which had not yet been incorporated was an unsurprising and normal procedure in the promoting process. Some cash, however, Mr. Moore and his friends did put up, but the funds thus invested were emphatically bread upon the waters. As soon as enough options had been secured to guarantee the success of the incipient trust, the American Can Company was incorporated, March 19, 1901, under the laws of New Jersey, and proceeded to authorize itself $88,000,000 capitalization (of which $82,466,600 was issued), half in common and half in preferred. The common and the preferred each had a par of $100, but the stock was actually traded in on a basis of $100 for a share of common *plus* a share of preferred, so that the $82,466,600 issued represented a market value of $41,233,300. Of this amount, the promoters took $39,000,000, in return for which they turned over their ninety-five can companies, plus $7,000,000 in cash to supply the new company with working capital. As the ninety-five companies had cost about $23,500,000, the total promoting expense (including the $7,000,000 cash for working capital) amounted to $30,500,000, and the promoting profit to the difference between $39,000,000 and $30,500,000, or $8,500,000. By the middle of 1901, therefore, the can-making industry in the U. S. had been almost entirely transformed into the American Can Company, and Mr. Moore and his friends had been repaid for their time and interest at the rate of something better than $1,000,000 a month.

Probably their profit would eventually have been even larger had they joined American Can (like the rest of the American family) to the Steel Corporation. But the Steel company was organized about a month before Can, so that Can could not have gone in with Tin Plate and Steel Hoop and Sheet Steel. To be sure, the two companies might have merged after Can's formation, but Mr. Morgan had already paid a high price for Mr. Moore's other properties and furthermore it would have been difficult to regard the acquisition of the Can Company as purely a further step in steel integration. At any event, although the Can Company was described shortly after its formation as being "closely allied to" and to be "ultimately absorbed by" the Steel Corporation, the closeness did not continue and the absorption did not occur. Otherwise, however, the Can formation would appear to have been an unqualified success. The promoters had their profit, the company had its business, and from every outside indication American can-making and American Can seemed to have become permanently identical.

BURLINGAME
PUBLIC

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And yet the tower had hardly been erected when it began to topple. The Tin Can Trust, although powerful, was also poverty-stricken. In the first place, it was notably overcapitalized. To balance its $82,000,000 of outstanding stock, its chief tangible assets were the plants which, as we have already seen, were bought for less than $25,000,000 and had a replacement value of possibly less than $15,000,000. In the second place, its $7,000,000 of working capital disappeared almost instantaneously. The purchase price of the absorbed companies did not include the actual inventories of these companies at the time of purchase, and for these inventories the Trust paid nearly $6,000,000. It also purchased, a few months after its formation, about $1,000,000 of its own stock, so that between these two transactions it began operations almost literally without a dollar to its name. For year after year it paid only partial dividends on its preferred (which were 7 per cent cumulative) and paid no dividends on its common. It took sixteen years to catch up with the preferred dividends (largely because of War orders, the company finally getting even on dividends in 1917). And the first common dividend was paid in 1923, or twenty-one years after the company's formation. It is no wonder that the stock of the company was long regarded as a highly speculative investment and that its market value went so low that for some years its promoters' paper profits remained purely paper. From the Trust's initial hard times and the resultant decline in its securities has arisen the story that George F. Baker Sr.

purchased large quantities of Can stock at $3.00 a share. Such stories are always impossible to substantiate, but it is true that Mr. Moore and Mr. Baker were fellow directors in First National and that the Can did slump to the $3.00 figure, at which Mr. Baker might well have accumulated it.

But a more significant result of the Trust's proud but poor situation was a compulsory advance in the price of tin cans and the resultant revival of competition. All monopolies are popularly supposed to celebrate their position as such by price-raising. The Can Company, however, did not raise can prices to collect any exorbitant profit. It was merely attempting to keep itself in business in spite of unfortunate structural deformities. But the motive did not influence the result. The higher price of cans made can-making profitable; promptly there followed just as wild a rush to get into the can business as there had been a rush to get out of it. A small tin can business did not require very much capital, and an industry which could be bought up for $25,000,000 could be reestablished again at the same or a smaller figure. Soon it seemed that everyone was making tin cans. The Trust bought up some of the new tin can companies and also bought up 1,000,000 or so cans, but tin can concerns continued to multiply, although some of them made very bad containers which were no help to the canning industry. Not until 1904 were prices stabilized, and by that time the damage had been done. Not all of the little can companies went out of business again after prices had been restored to normal. The canning business was itself expanding. More fruits and vegetables were being canned; more people were eating canned foods; the Trust was attempting the impossible performance of continuing to monopolize a constantly expanding industry.

And in 1904 there came additional competition in the shape of a single strong competitor. Mr. Norton left the Trust and proceeded to organize the Continental Can Company. There are, of course, many stories as to why the man who was the Trust founder (from an operating standpoint) should so soon have parted company with it. Perhaps the simplest explanation is that Mr. Norton was growing old, that he was looking forward to his retirement, and that he had a son whom he wished to set up in business. There was also a Mr. Assman, friend and associate of Mr. Norton, who was in much the same position, there being an Assman Jr. to complete the parallel. So out went Mr. Norton and Mr. Assman and many another good Trust executive, and in came Continental as new and vigorous can competition. By 1913, when the government got around to prosecuting the Trust under the Sherman Act, the 90 per cent monopoly of 1901 had dwindled to 50 per cent, and healthy and growing was can competition.

The government's suit was the final chapter in the decadence of the Trust's character as such and very nearly resulted in the dissolution of the combine. It was ruled that Can had been formed in violation of the Sherman Act, and even after its organization it had indulged in certain objectionable practices, notably the concealment of subsidiaries. Yet by 1913 the Can Company had been for some years under the control of the more constructive elements in its composition. If it had been a bad trust, it had also become a good manufacturer, and its services to the canning industry were of inestimable importance. If an industry suffers from the presence of a company that is too big, it suffers also from the absence of a company that is not big enough. Before the advent of the Can Company, the canner purchased his cans from month to month, and the price of cans, low in the winter, increased through the spring and summer and reached its apex during the harvest season, in which the canner needed large and immediate deliveries at no matter what cost. The American Company offered the canner a seasonal contract, at a fixed price and with a guarantee of prompt and ample deliveries. Furthermore, the American Company, early in its career, went very thoroughly into the research problem of scientific canning and has been the foremost supporter of the National Canners' Association since the formation of that canning research organization. During the suit against the Can Company, a great many canners were asked whether they thought the Trust should be dissolved. None spoke in favor of dissolution; many spoke emphatically against it. And the trial judge himself, in the course of rendering his opinion, said: "I am frankly reluctant to destroy so fine an adjusted industrial machine as the defendant has shown itself to be." Even competitors of the Can Company said that they had no objection to the manner in which it carried on its business and that they felt no undue pressure from its power and scope. Thus by the time that the Can chickens came home to roost, they were not to be birds of such a very wicked feather. It is true that if the Can Trust (like the Oil Trust or the Tobacco Trust) had been organized by the juncture of large units which could have conveniently been separated, such separation might have been ordained. But no court could restore the 175 can-making companies as they existed in 1901, and any attempt at reestablishing the *status quo* would not only have been obviously unsuccessful but would have plunged the entire canning industry into a chaotic demoralization. Thus the court refused the government's petition for dissolution, and it does not appear likely that the American Company will ever come into court again on Sherman Act charges. For the leopard not only changed its spots, but found itself much better off without them.

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After its escape from governmental dissolution, the American Company entered upon its modern period—a period begun by War-time prosperity, a period which has continued through a conservative management, a sound financial structure, a steady

[*Continued on page 111*]

P. & A.

THE LATE DR. JOHN T. DORRANCE

Can and Soup

A TRITE literary theme is the situation in which a young man, brilliantly graduating from college, submits to economic or paternal pressure and enters his father's factory. Only superficially, however, did the career of the late Dr. John T. Dorrance (who died September 21 at his home in Cinnaminson, New Jersey) conform to such a formula. True, Dr. Dorrance received a bachelor's degree from Massachusetts Institute of Technology (1895) and a doctor's degree from the University of Göttingen (1897). Furthermore, after Columbia, Cornell, Bryn Mawr, and Göttingen had offered him a position in their chemistry departments, he went to work in the canning factory of Joseph Campbell. But no unwilling man of business was Dr. Dorrance, and his family was disappointed at his not embracing a scholarly career. Furthermore, by applying the principles of chemistry to the canning of soup, Dr. Dorrance not only made Campbell Soup famous throughout the world, but built up a personal fortune estimated at more than $150,000,000.

The Campbell company, putting up some 200 varieties of food products, was losing $60,000 a year when Dr. Dorrance came to work for it. There were on the market canned soups, known as *liquid* soups, and containing a considerable quantity of water. Dr. Dorrance worked out a process by which the water was eliminated and persuaded the Campbell company to abandon its 200 item line and concentrate on soup, beans, and spaghetti. The Campbell company does not release sales figures, but in 1911 was selling 1,500,000 cans daily and the present sales are many times that figure.

Dr. Dorrance began advertising Campbell Soup in 1899, spending $4,264 on street car advertising in New York City. For the last several years the advertising appropriation has exceeded $3,000,000 per annum. In 1914 Dr. Dorrance bought the company; at his death owned one of the country's largest individually possessed corporations.

The American Amphitheatre

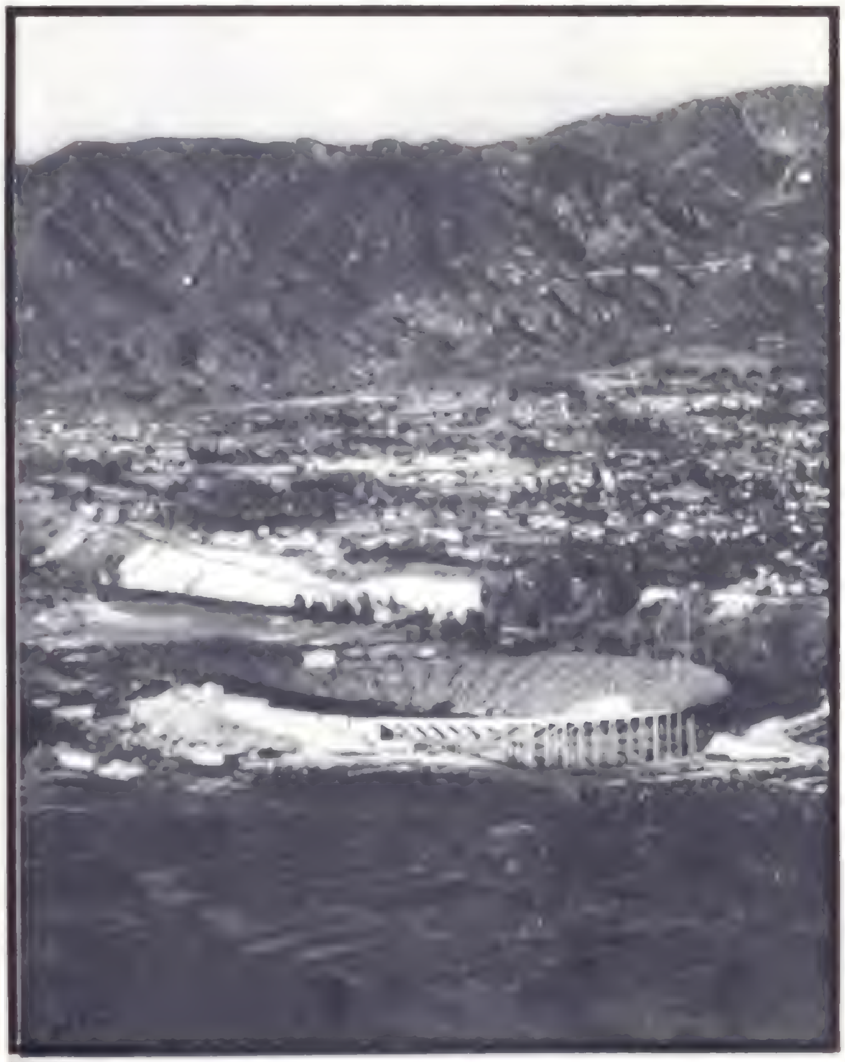
Which is always a magnificent object to look upon, is usually a somewhat unhappy object to own.

BURLINGAME PUBLIC LIB.

A VERY special business under the sun is the ownership and maintenance of stadia. Broadly speaking, it is not a profitable business, for in spite of some tempting seven-figure gates, only four kinds of athletics in the U. S. show attractive returns, to wit, professional boxing, professional hockey, professional baseball, and amateur football. Out of these four sports the baseball park and the football stadium emerge as the two types of structure evidently the most congenial to the race: the one, highly professional in character, boasting no architecture other than that of necessity, and showing profits by the same token; the other, no matter how large the earnings, always something of an esthetic triumph with roots as deep as the days of Pindar.

Superficially considered, college football stadia are gold mines, but their average size has been vastly overrated by the popular imagination. There are today in the U. S. scarcely more than a dozen stadia larger than the Roman Coliseum, which had a capacity of 70,000 persons (20,000 of them afoot). An arena at Capua was constructed for some 100,000; while according to Pliny, from whose figure it would be well to deduct at least 25 per cent, the gigantic Circus Maximus at Rome accommodated 250,000 for the chariot races. Against this, the capacity of the average American college football stadium is a mere 20,000. It was not until the Yale Bowl was constructed in 1914 with a total seating of 74,786 (61,000 originally) that the old Coliseum figures were surpassed.

No longer the largest of collegiate arenas by any means, the Bowl still remains the cheapest from the point of view of invested capital per seat. Its total cost was $750,000, while all other equivalent stadia have cost over $1,000,000. One reason for this economy was the pre-War construction cost; another, the fact that the Bowl has never been finished, has no architectural embellishment, is nothing but a vast excavation, half-a-mile around its rim, its sides formed by earth thrown up by the digging. Its cost was raised by subscription of alumni, in consideration for which fifteen year preferential seats were given to 5,500 subscribers. This year most of the preferences expire; all of them pass in 1934. The gross gate of the Bowl for a Yale-Harvard game is about $350,000, half of which goes to the visitors. It is used for seven football games a year, from which it nets a profit of $500,000, or more than $20,000 an hour of actual operation. This includes the loss involved in staging one lacrosse game and one soccer game a year.



MIDGETS

The Californian hills are unmoved by the excitement of 70,000 persons at the East-West football game in the Pasadena Rose Bowl

Undoubtedly the largest college football stadium in the world is that of the University of Michigan, which seats 87,253 persons, exclusive of possible standing room. It was financed by a $1,500,000 issue of 3 per cent bonds, which carry the right to purchase two preferred seats for each game until retirement. Next largest stadium is that of Ohio State University, which seats 85,000, while the most beautiful of the titans, built for 78,000, belongs to the University of California. Overlooking sapphired San Francisco Bay, where the sun can be seen passing through the Golden Gate on its way to Japan at the close of every game in the autumn, the Californian rests in a natural amphitheatre, its northerly and southerly ends merging into the slopes of a canyon, at the foot of the Berkeley hills and just above the campus. On its major axis the farthest spectators are only 378 feet from the center of the field; on its minor axis, only 282 feet. Its cost of $1,300,000 was raised by selling books of scrip, carrying ticket rights, to undergraduates, alumni, and outside football fans. To illustrate the enormous size of these structures, the stadium of the University of Pittsburgh, which seats 70,000, contains seventeen miles of seats in its fifty-five rows, was constructed with 2,250 tons of structural steel and 20,000 cubic yards of concrete. Last month a new stadium for Knute Rockne's famous traveling team from Notre Dame was dedicated. Doubtless Notre Dame will henceforth play more games at home, collect a larger gate receipt.

These athletic investments netting 15 to 30 per cent a year (the Yale Bowl nets about 66 per cent on its total investment) are tokens of the love which the American people bear in their hearts toward football. That the performances of eleven Bachelors-to-be of Science or of Art should yield such fantastic returns has been deprecated by some reliable educators, the argument being that youth and amateur sports should not be exploited financially. But athletics are as vital to the enjoyment of life today as they were in the days of Pindaric Greece, and it is a superficial view which considers the football stadium as a thing apart from the athletics that it supports. The stadium is no more than a unit in the plant of an elaborate nonprofitable athletic enterprise; the heavy fate of most athletic ventures hangs over it, decreeing that it shall shoulder the net losses of fifteen other intercollegiate and interclass sports, in which from 60 to 80 per cent of the undergraduates participate. University of Pennsylvania's Franklin Field, an ambidextrous stadium equipped for football, baseball, and track, is a fair example. It has a capacity of 81,000 persons and cost $1,750,000, this amount having been raised by a bond issue floated through Drexel & Co. of Philadelphia, and later supplanted by a mortgage. The gross football gate in 1929 was $802,403, net profit $463,807; gross track gate $23,473, net loss $21,408; gross baseball gate $4,570, net loss $20,004. Franklin Field not only shoulders these losses but, like Prometheus, is bound to the rocky destinies of the gymnasium, the swimming tank, the golf course (gross receipts: 1929, $25), and the boathouse (total loss: $44,527). In spite of the fact that Pennsylvania basketball, in its new palestra, earned a profit of $12,033, the net loss from athletic operations in 1929 was $45,968, only $15,416 of which was expended on permanent improvements. Similarly the lovely Doric Cornell Crescent, which seats 30,000, nets a profit of $60,000 in odd years, when Princeton and Columbia play there. Net football profit, including Cornell's share of games played away from home, was $105,000 in 1929. But the losses involved in eleven other sports, including a $30,000 loss from track and a $29,000 loss from crew, produced an athletic deficit at the end of the year of $18,000.

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HIGH MASS WAS CELEBRATED AT THE EUCHARISTIC CONGRESS, 1926, BY

YALE FROM THE SKY
© 1925
YALE CO-OP

© 1925 Yale Co-op.

THE YALE BOWL

Eldest of American titans, the Yale Bowl cost only $10 a seat to build. Gross athletic receipts in 1929 were $1,270,000, of which football contributed $1,165,000. After deducting the deficits of fifteen other sports, net profit for 1929 was $287,000, all but $2,000 of which was used for new purchases and construction.

Nonprofitable also are several municipal enterprises, undertaken out of civic pride and in the hope of attracting large crowds to the city. Most recent of these is the enlarged Los Angeles Coliseum owned equally by the city and county of Los Angeles. Its name has been officially changed to the Olympic Stadium, for here the Olympic games of 1932 will be held before 125,000 persons. Baltimore's Venable Stadium, with a capacity of 78,000, is another municipal affair. The titan of them all, however, is Chicago's Soldier Field, probably the largest stadium in the world, with an official capacity of 165,000 persons. Into its vast enclosure 220,000 were actually assembled for the Eucharistic Congress in 1926. It is owned by the South Park District of Chicago, is an essential part of the city's park development, was financed by three issues of South Park District 4 per cent twenty-year bonds totaling $8,500,000. All but $1,000,000 of this amount has been expended. Citizens are taxed for the interest and sinking fund requirements on the bonds, leaving the stadium management in the enviable position of having to clear maintenance charges only, by means of the largest gate capacity in the world. The gross gate for the Tunney-Dempsey battle, attended by 130,000 persons, was $2,650,000. Even with a force of 7,000 ushers, Soldier Field cleared a profit on this venture, but on the whole the commissioners aim to make no more than the maintenance charges of $100,000. From May 1 through November, Soldier Field averages two engagements a week, including

E CARDINAL BONZANO BEFORE 220,000 PERSONS IN CHICAGO'S SOLDIER FIELD

conventions, shows, congresses, football games, music festivals, etc., etc. While the basic charge for the use of the stadium is 15 per cent of gross receipts, with a minimum guaranty of $1,000, many of these gatherings are free. Excluded from use of the stadium are (1) sectarian religious gatherings, propagandistic in character; (2) partisan politics. The big event of the present season will be the Notre Dame-Army game, November 29.

Were Soldier Field privately owned and operated, the management would presumably have difficulty in meeting the $340,000 annual interest charges on its bonds, charges for sinking fund, expenses of advertising and promotion, taxes. This is indicated by the adventures of another Chicago giant, the Chicago Stadium, largest indoor stadium in the world, with a capacity of 20,000 to 25,000. Organized in April, 1928, under the ægis of a glowing prospectus, the Chicago Stadium Corp. (Sidney N. Strotz, president) ran an operating deficit of $82,000 for the first six months of 1930, with a gross income for the year ending July 1, 1930, of $1,096,000. The corporation defaulted on its first mortgage bonds June 15 and on its sinking fund requirements July 1 and has called upon its stockholders for $300,000 cash, although it operated 156 days during the 1929-1930 season. Its elder brother in New York, Madison Square Garden Corp., with a slightly smaller capacity, has had, since the death of Tex Rickard, only a slightly better fate. With a gross income of $4,406,000 (to which the boxing gate from various arenas contributed $2,274,000), Madison Square Garden Corp. made a net profit of $411,345 for the year ended May 31, 1930; paid $487,280 in dividends, which left a deficit of $75,935 to be deducted from a surplus of $1,000,000.

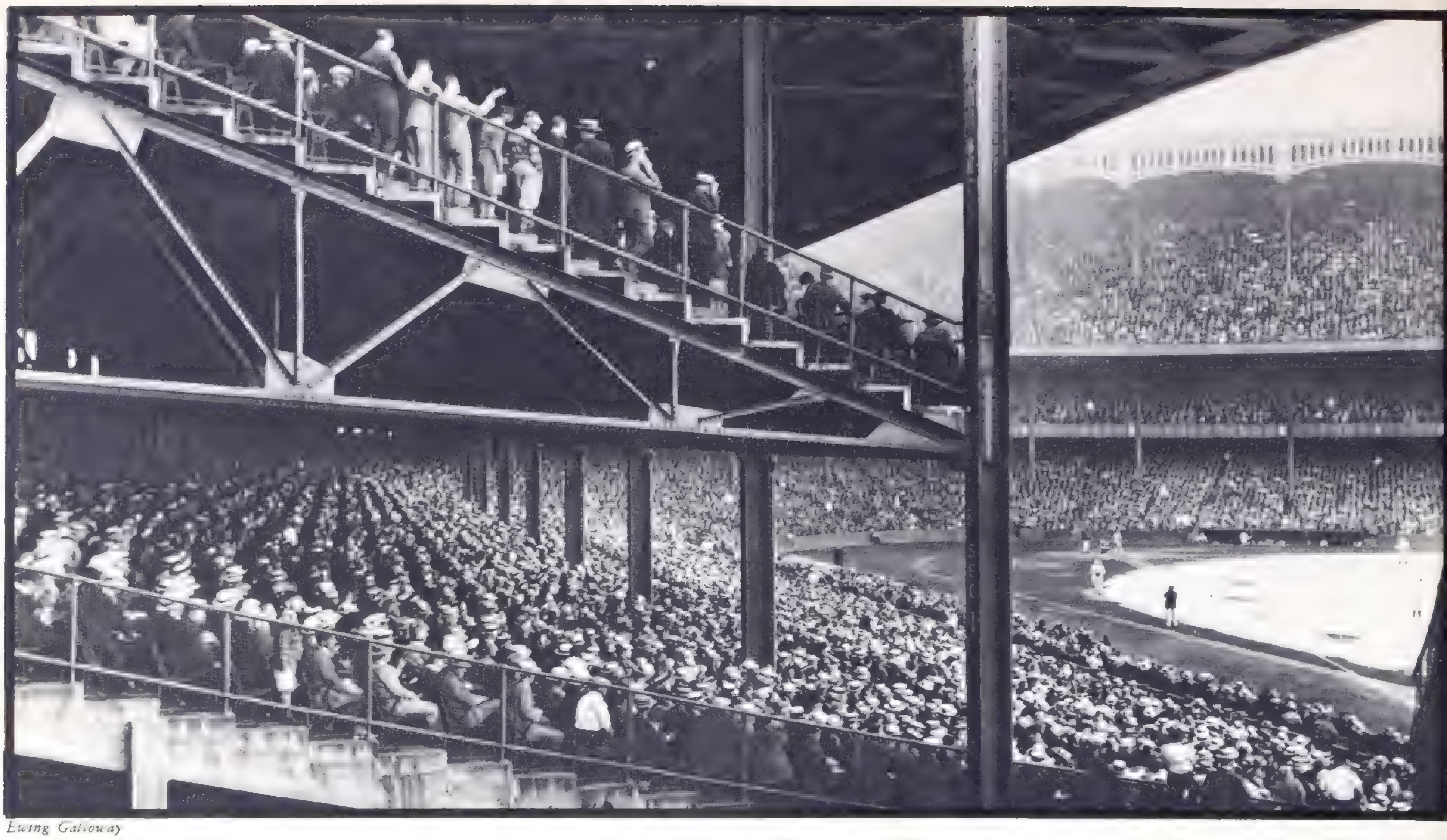
Lest the picture be distorted, however, it is necessary to point out that few football stadia show actual losses, while several of the larger ones roll up six-figure profits at the end of each year. Thus, after carrying all minor athletics, Ohio State's stadium makes a net of some $200,000, including concessions, part of which is used for new equipment and part carried to surplus. There are many others. But the wonder is that the profits are so small, for if there is any occasion that warms the American's heart more than another, it is the gathering together of thousands to witness the struggle of twenty-two gladiators in the season of falling leaves. The brevity of the season, the brevity, too, of the gladiatorial careers, denying to any one of the heroes a perpetual throne such as that occupied by Mr. Ruth, has something to do with the tenseness of America's excitement. Even the curved line by which the rim of a stadium cuts the sky is cold and tense. America does not love the hot, sensuous bull rings and would not have loved the classic play of muscles in sunny Greece. The American taste is autumnal and violent—even world series baseball is played in October. Instead of being criticized, the managers of football stadia should be praised for exploiting this taste as modestly as they have.

RLINGAME
PUBLIC
LIB.

Underwood & Underwood

HOLLYWOOD BOWL

Perhaps the loveliest of all modern amphitheatres is the shell-like Hollywood Bowl, which seats 20,000. It is dedicated to the arts and especially to "Symphonies Under the Stars." From the topmost row a pin drop on the stage can be heard. It is nonprofitable, belongs to Los Angeles County.



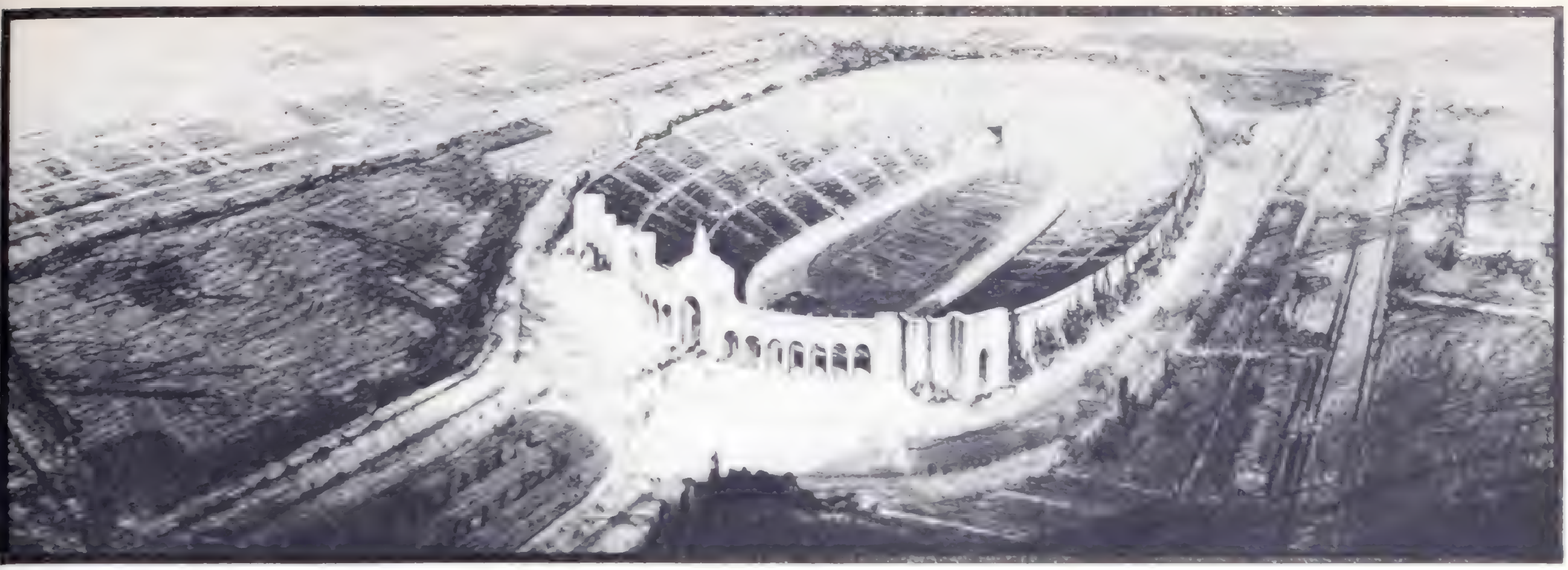
Ewing Galloway

THE YANKEE STADIUM IS THE LARGEST ARENA THAT IS OPERATED FOR A PROFIT. RECORD BASEBALL ATTENDANCE, 72,000; RECORD GATE $225,000, DURING THE 1928 WORLD SERIES BETWEEN ST. LOUIS AND NEW YORK

BURLINGAM
PUBLIC

Ewing Galloway

THE OLD PLAZA DE TOROS AT MADRID WHERE 13,000 PERSONS PAY A GROSS GATE OF 130,000 PESETAS ($20,000). OF THIS, FROM 7,000 TO 25,000 GO TO THE MATADOR, WHO ALONE MAKES GOOD MONEY



ARCHITECT'S VIEW OF THE NEW LOS ANGELES OLYMPIC STADIUM TO SEAT 125,000 FOR THE OLYMPIC GAMES IN 1932—A METAMORPHOSIS OF THE LOS ANGELES COLISEUM. CAPACITY CROWDS WILL ENTER AND EXIT IN FIFTEEN MINUTES

BURLINGAME
PUBLIC
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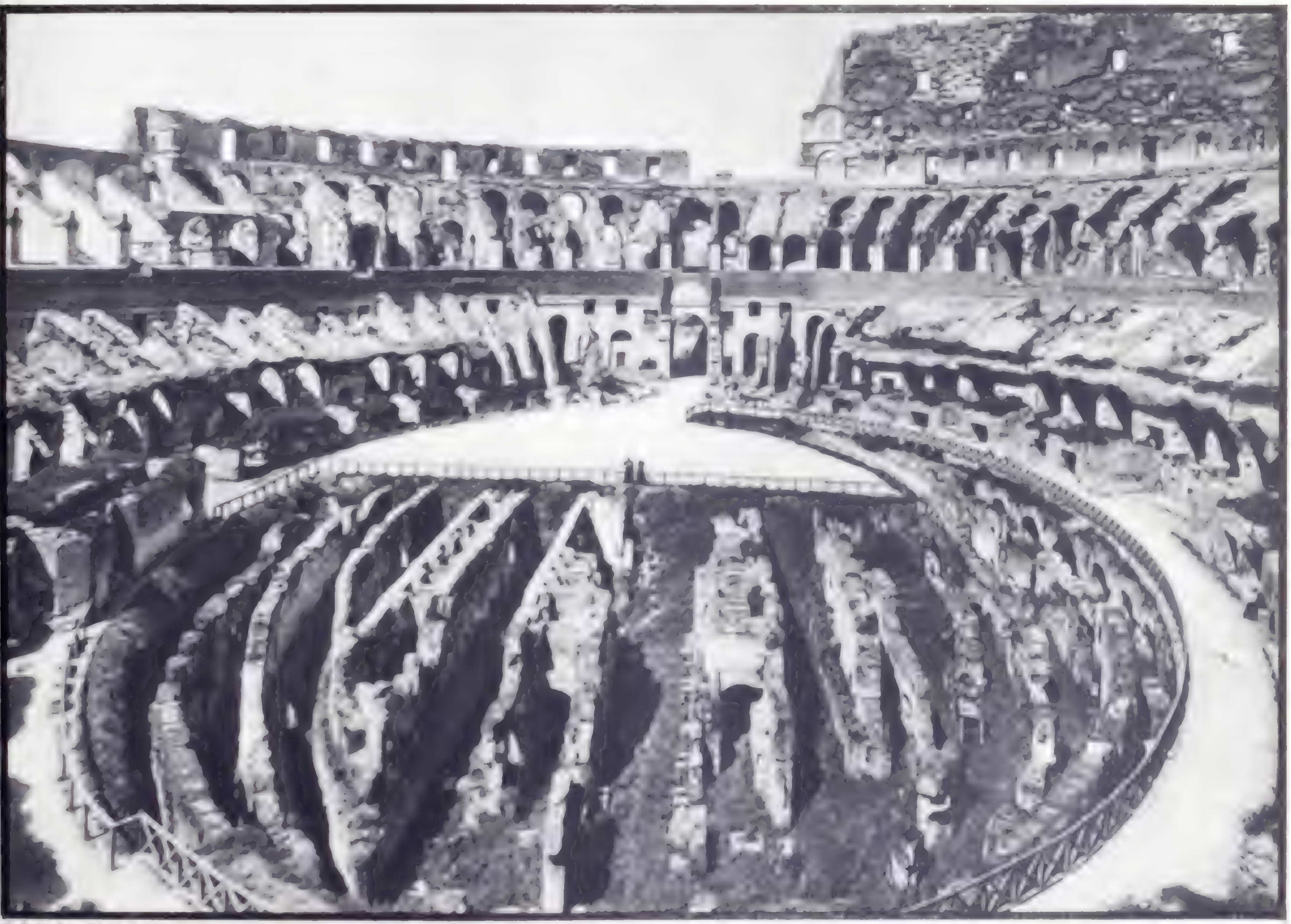

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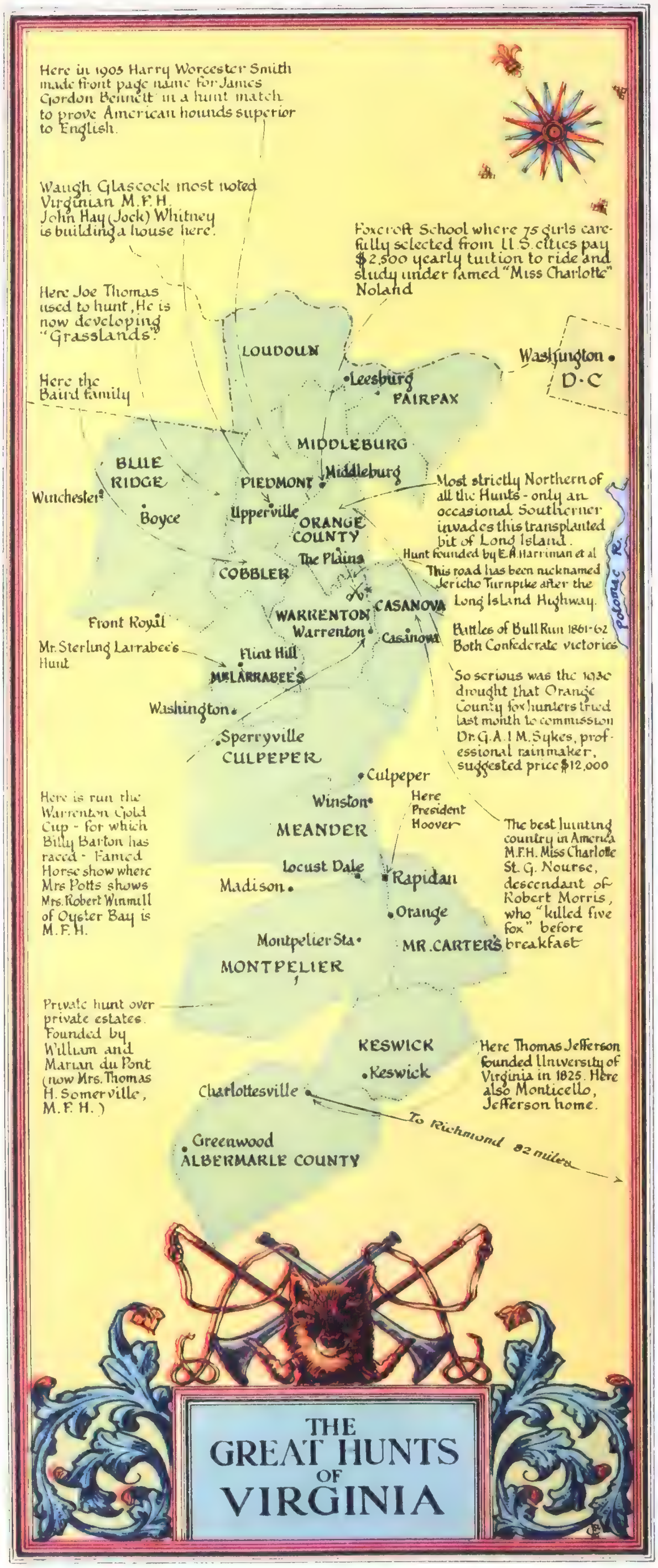
THE ROMAN COLISEUM IS THE HOARY PROGENITOR OF ALL MODERN FOOTBALL ARENAS. NOT UNTIL 1914 WAS ITS CAPACITY OF 70,000 SURPASSED BY U. S. STADIA. ITS SEATS BORE NUMBERS AND ENTRANCE TICKETS WERE OF CLAY


Here in 1905 Harry Worcester Smith made front page name for James Gordon Bennett in a hunt match to prove American hounds superior to English.
Waugh Glascock most noted Virginian M.F.H.
John Hay (Jock) Whitney is building a house here.
Here Joe Thomas used to hunt, He is now developing "Grasslands".
Here the Baird family
Foxcroft School where 75 girls carefully selected from U.S. cities pay $2,500 yearly tuition to ride and study under famed "Miss Charlotte" Noland
LOUDOUN
Leesburg
FAIRFAX
Washington
D·C
MIDDLEBURG
Middleburg
BLUE RIDGE
Winchester
Boyce
PIEDMONT
Upperville
ORANGE COUNTY
The Plains
Most strictly Northern of all the Hunts - only an occasional Southerner invades this transplanted bit of Long Island.
Hunt founded by E.H. Harriman et al
This road has been nicknamed Jericho Turnpike after the Long Island Highway.
Potomac R.
COBBLER
WARRENTON
Warrenton
CASANOVA
Casanova
Battles of Bull Run 1861-62 Both Confederate victories
Front Royal
Mr. Sterling Larrabee's Hunt
Flint Hill
MR. LARRABEE'S
Washington
So serious was the 1930 drought that Orange County fox hunters tried last month to commission Dr. G.A.I.M. Sykes, professional rainmaker, suggested price $12,000
Sperryville
CULPEPER
Culpeper
Here is run the Warrenton Gold Cup - for which Billy Barton has raced - Famed Horse show where Mrs Potts shows Mrs. Robert Winmill of Oyster Bay is M.F.H.
Winston
Here President Hoover
MEANDER
The best hunting country in America M.F.H. Miss Charlotte St. G. Nourse, descendant of Robert Morris, who "killed five fox" before breakfast
Locust Dale
Rapidan
Madison
Orange
Montpelier Sta.
MR. CARTER'S
MONTPELIER
Private hunt over private estates. Founded by William and Marian du Pont (now Mrs. Thomas H. Somerville, M.F.H.)
KESWICK
Keswick
Here Thomas Jefferson founded University of Virginia in 1825. Here also Monticello, Jefferson home.
Charlottesville
To Richmond 82 miles
Greenwood
ALBERMARLE COUNTY
THE GREAT HUNTS OF VIRGINIA

Jericho Turnpike

Means Long Island, but i
also means that big part of Long Islan
which has migrated to the Virginia fox-hunt-
ing lands. What the invasion has done t
Cavalier country, families, hunts, and rea
estate; Foxcroft School; and Harry Worceste
Smith.

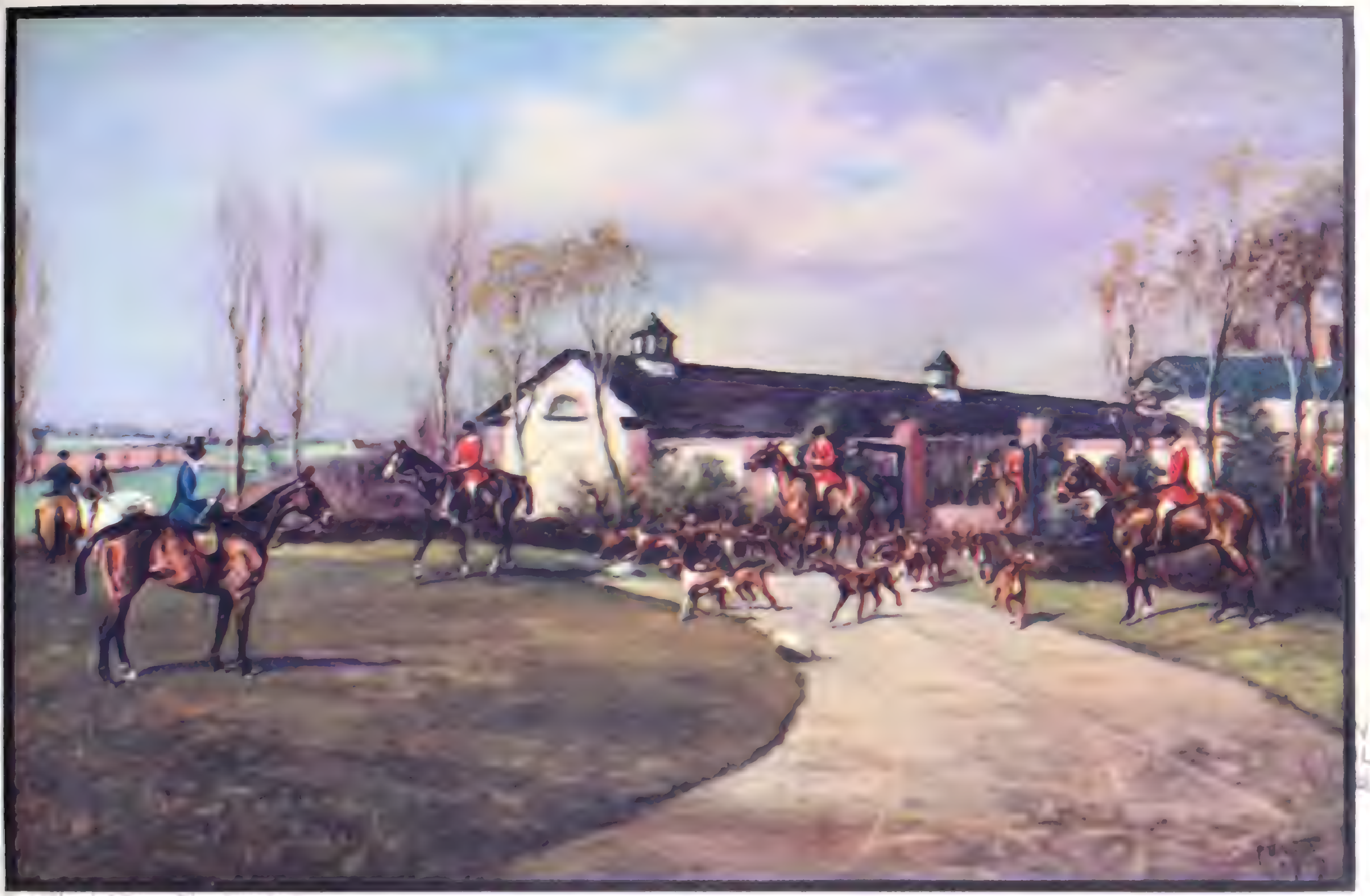
NATURALLY and inevitably Virginians hunt the fox. Virginia' earliest colonists were predominantly English (in remote hill of the Blue Ridge, bare-footed families still sing Elizabethan ballads and preëminently Cavalier: a large aristocracy with large estates Overseers had the crops cultivated and harvested: the cotton baled the tobacco packed in hogsheads. Factors supervised the sale an shipping. A gentleman could not work, of course, so what else wa there for him to do but hunt? As a settler, he had the country; as a trader, he had the horses; as a Cavalier, he had the tradition; as a slave-owner, he had the leisure. What, indeed? So he hunted. An because horseback was the only communication between wide estat and wide estate, he rode enough to hunt well. And because wid estate and difficult communication made other social assemblies few he hunted often.

A particularly devout fox-hunter was the Virginian of the Piedmont district: Loudoun, Fauquier, Rappahannock, Culpeper, Madison, Orange, Greene, Albemarle—those soft, rich, rolling countie on the eastern slopes of the Blue Ridge. Here rusticated Jefferson Madison, Monroe; here reigned the Carters and the Randolphs, th Walkers and the Fairfaxes.

A hundred, a hundred and fifty years ago, it was most conspicuously the Walkers and the Fairfaxes in the wakes of whose hound the gentry streamed cross-country, whose hunts were crusade-lik in their simplicity and ardor, whose breakfasts were heavy with venison and turkey, savory with gravies and spice, strong with wines an punches. It was old Dr. Tom Walker, indeed, who owned and hunte the first organized pack of hounds in the state, at "Castle Hill" i Albemarle, in 1742. Nor did descendants of the original pack ceas to be hunted by descendants of the original master until 1912, whe the encroachments of wire forced its disbandment by a great-great-great-granddaughter, Mrs. Allen Potts, sister of the Princess Troubetzkoy and a grand old figure in Virginia today.

This, then, the legended land through which the slim stoop-shouldered aristocrats of Virginia ride with infinite elegance and ol clothes. But even their impeccable haughty presence does not explai why the Virginia hunts today provide as assured and eclectic a socia sporting *milieu* as any in the U. S. Nor why the fortressed but eage society of Long Island was willing to move its fortresses (or build new ones) southwest of the Potomac so that it could say, "Oh, yes, w hunt," and add, after the terrible portentous pause, "in Virginia." So that the macadam road from The Plains to Warrenton was nicknamed Jericho Turnpike and became used to the balloon tires o Packards and Rolls Royces and the cheerful creaking of Ford statio wagons. Those same automobiles which were already ruining th great Meadow Brook when H.R.H. the Prince of Wales visited ther in 1924. And so that the Walkers and Fairfaxes and their descendant became aware of names and people they had never before surmised

Wherein, then, the reason for this social migration if it is not (an



From 'Hounds & Hunting Through the Ages'

THE F. B. VOSS PAINTING OF MR. J. B. THOMAS'S FOX HOUNDS LEAVING THEIR VIRGINIA KENNELS. IN THE FOREGROUND ARE MRS. THOMAS ON *LIGHTNING* AND, AT THE RIGHT, MR. THOMAS ON *FIREMAN*. THIS HORSE WON THE MEADOW BROOK HEAVYWEIGHT POINT-TO-POINT IN 1922

it is not) the Southerners themselves? What factor could be so potent as to change a state and add a necessity to a society which already had a surfeit of fillips—all necessary? That so potent factor was one man. A man who had no special interest in the society he was altering. His name is Harry Worcester Smith.

Man who made Virginia

It is at Worcester, Massachusetts, that this extraordinary figure keeps two secretaries busy answering inquiries on every horsey subject, cataloguing his enormous collections of horseana, and preparing the meticulous memoirs of a sportsman. It was in Ireland that he hunted his own pack of Grafton hounds, that he was the first American to be made master of a local hunt (the Westmeath), that he astounded the gentry by serving such alien delicacies as chicken *à la* Maryland, Rokeby hams from Virginia, Florida grapefruit, and Deerfoot sausage, and that the violent, relentless rains made him declare, "One season's mastership is enough: Grafton hounds have hare feet, not webbed feet; they have been broken to run after the fox, not swim." But Worcester and Ireland are incidentals. Above and beyond them, he has always been Harry Worcester Smith of Virginia—hereinafter known, to his certain wrath (he likes the "Worcester"), as HWS.

Reminisces HWS, then: "In 1898 I went to ride a steeplechase for H. Rozier Dulany [once HWS rode the winner of the Champion Steeplechase, twice the winner of the Meadow Brook Cup, four times the winner of Genesee Valley point-to-point] and after the race Thanksgiving Day went up and spent two or three days with him in the Piedmont Valley. There, following a small pack of American hounds which is hunted in the old-fashioned Virginia way. No liveries, no velvet caps, no hunt servants, one darky boy only. I was the first outsider from the North.

"I saw its future as a great hunting country and spoke to a number of friends . . . I was made master of the Piedmont in 1905 and stayed there for two years. 1905 the Fox Hound Match took place [American hounds versus English], during which James Gordon Bennett took each day of the match and each day when I hunted in Loudoun, telegrams collect to 600 or 800 words . . . The match and its publicity really made Virginia."

The man is more exact than modest, but honest Virginians will admit that he, personally, was largely responsible for the renaissance of their fox-hunting. After the war, when all of their blood-horses (save such as those whose escapes are romantically celebrated in *Æneas Africanus* and Thomas Nelson Page's *Meh Lady*) had been carried off by the invading Yankee, returned patriots had no stock fit to breed and no money to buy new stock. As a result, hunting went into a decline, and not for thirty years was it practiced by other than the tatterdemalion packs which HWS describes. Indeed, the mountain hunts and the outlaw hunts (of which more later) still work in this fashion, with each neighbor contributing his hound or two. The Piedmont Hunt was the first object of enterprise and organization, and once it was running smoothly HWS invited to it the attention of the whole hunting world by his fox hound match, which the American hounds decisively won, along with a plate, $2,000, and many a column in the lamented New York *Herald*.

The Piedmont, both hunt and country, successfully publicized, HWS turned to the Loudoun Hunt, which had been started in 1894 with handsome David Tennant (of the "Red Gate" Tennants) as first M. F. H., and now was half-heartedly carrying on with the encouragement of Westmoreland (later,

International

MIDDLEBURG, THOROUGHLY NORTHERNIZED, IS ONE OF THE SMARTEST OF THE FAMOUS VIRGINIA HUNTS

International

THE MIDDLEBURG ON THE ROAD. FEW DESCENDANTS OF FAIRFAXES CAN BE SEEN IN THIS PICTURE

Keystone

THE M. F. H. AT BLUE RIDGE INSPECTS THE PACK. BLUE RIDGE REMAINS AN ESSENTIALLY VIRGINIAN INSTITUTION

Governor) Davis. Fletcher Harper (of the publishing Harpers) was M. F. H., but had killed only one fox in the past two years, so HWS's prompt pursuit and dispatch of fourteen was properly rewarded by his elevation to the mastership.

Such spectacular performances echoed loudly in New York. Rich, sporting Northerners, seeking a mean between the rigorous Adirondacks and the Palm Beach rôtisserie, suddenly began to look up forgotten Virginia friends. They came, they saw, and they purchased for a song (Yankee Boodle) whatever old estates were within hacking distance of the meets—estates with storied tables but empty pantries. Others came after, bringing their friends and their friends' friends; HWS believes, and with justice, that he made the Piedmont country. So far as the North is concerned, he may be said to have made Virginia.

Having planted the seed and harvested the first fruits in fame and anecdote, HWS withdrew from Virginia. Only occasionally does he return, then to judge, excellently, races and shows. Today, sixty-five, he spends his winters with the polo-playing Hitchcocks in Aiken (they had to build a special house to hold his books and his papers) and his summers near Worcester in big "Lordvale," writing his memoirs, admiring his horse portraits by Troye, and cursing the aëroplanes that roar over his stables.

He is a vain man, inclined to be officious, and not everyone likes him. But his rank in the world of American fox-hunting is beyond question. As is his magnificent courage. "Harry Worcester Smith? He throws his heart over and jumps after it . . ."

The Virginia he made

Absorbed in the vastly intricate problem of determining just what kind of feet a hound should have, Harry Worcester Smith could not be expected to pay attention to the significance of the social hegira he caused. Nor is he very much aware that his sporting enthusiasms caused violent, frequent, and jubilant sales of Southern real estate. Squarely in the middle of the Cavalier country, completely composed, move the First Families of Detroit, Chicago, New York. The social spectrum of Virginia, once uniformly gray, suffered a change into blue. Roughly it might be outlined thus:

Infra-Blue	*Half & Half*	*Ultra-Gray*
Middleburg	Cobbler	Casanova
Orange County	Piedmont	Blue Ridge
Warrenton	Keswick	Albemarle
		Loudoun

In addition to these ten there are, of course, the private packs (Mr. Larrabee's, the Montpelier), the ex-hunts (the Castle Hill), and southern Virginia hunts (the Deep Run).

Arrogant Orange County

By the extra-Virginian hunting world, best-known of all Virginia hunts is the Orange County. Via rotogravures and smart-charts, the Orange County is the Piedmont's showpiece, from the scarlet evening coat with white corded silk facings and the silk knee breeches which adorn Colonel "Billy" Mitchell of "Boxwood" to the vast, rambling Adirondacks lodge-like clubhouse in The Plains. (Observe that Orange County is not in Orange County, Virginia; founded in the North in 1900 by Edward H. Harriman, etc., and later transferred to Virginia, it takes its name from Orange County, New York.)

To ride in the grand manner with the elect of the Orange County (Mr. and Mrs. William Langley, the Oliver Filleys, and Mrs. Filley's brother, Percy Pyne, the Oliver Iselins, many Phipps, the John C. Butlers of "Kelvedon Farm," Mrs. Cary Rumsey [daughter of E. H. Harriman], Virginian Mrs. D. N. Lee and Miss Carter and New York Johnston Redmonds), you will need a deal of money and a sizable bit of property in the neighborhood. This latter you will surely be able to purchase, for while members of the hunt own some 20,000 manicured acres, there is still plenty of Virginia real estate available for Long Island pocketbooks. (Native Virginians are amused at this requirement of the hunt.) But even when you have amply met the Orange County demands, it is not at all certain that you will be welcome. "Our fields," complains the hunt, "are too big now." Which is too bad, because its fast, open country is beautifully kept, with less wire than any other, and such wire as still persists either broken with timber panels or safely cooped over. True, an objection to the Orange territory is that its coops and panels are too narrow (sixteen feet), causing the crowded fields to string out. But hardly a criticizing hunter would not take an invitation there and ask no questions why or whence.

Fletcher Harper is the joint M. F. H. of the Orange. The twenty years since his discomfiture by HWS have seasoned his knowledge of hounds and hunting. Small, neat, ruddy, he has now learned almost as much about his business as was known by his once joint M. F. H., the late R. Penn Smith ("Buzz" Smith), whose lore Harper greatly absorbed. For a while, Mrs. R. Penn Smith filled Buzz's boots capably as joint M. F. H., but since her recent marriage to W. Plunket Stewart—brother of Maryland's premier sportsmen, Redmond and Lürman Stewart—there are fears that she will hunt with her new husband's pack, the Cheshire Fox Hounds, instead of bringing him to help rehabilitate the Orange in county popularity. In this connection, the Orange's levering wealth, its arrogant exclusiveness at plain odds with local tradition, and its complexly divorced and remarried membership must be known to explain a native Fauquierienne's innocent identification of a fellow guest: "She? You wouldn't know her; she hunts with the Orange."

Smart Middleburg

That the Middleburg Hunt is less consciously diamond-spangled and therefore less disliked is due mostly to its M. F. H., Daniel C. Sands. Though not born in Virginia, he has lived there long enough to be considered, admiringly and affectionately, a Virginian; local opinion can go no further. Storekeepers and urchins greet him happily as through Middleburg he strides, large, jovial, rubicund. Easily and tactfully he pacifies the non-hunting landowners whose crops have been crushed by hurrying hooves. And even the Vestals of the Arcana welcome him at their tables. President of the Middleburg National Bank, the Loudoun County Fair, the Purcellville Horse Show, and the "County Nurse" (charity clinic), chairman of the county drought committee, a liberal contributor to every needy cause, and a very Briareus-Jack Horner for having manifold fingers in diverse pies, Dan Sands is a power—never the less a very popular power—in the land.

[illegible]

HARRY WORCESTER SMITH, GREATEST FIGURE IN AMERICAN FOX-HUNTING

Underwood & Underwood

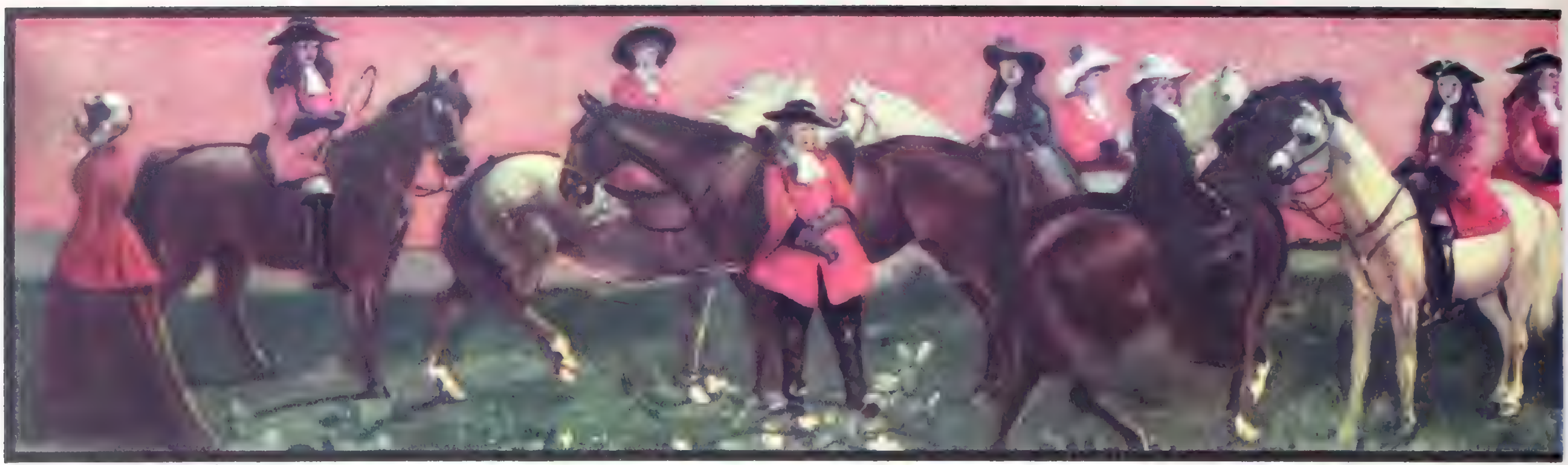
QUIETLY VIRGINIAN IS THE COMPARATIVELY YOUNG CASANOVA HUNT. THEIRS IS SPLENDID COUNTRY

It is no exaggeration to say that Dan Sands made the Middleburg Hunt, and, by intimate association, Middleburg. Once a dusty, drowsing Piedmont village, the fox-hunters have now taken it over lock, stock, and barrel (lots of barrels). Almost every available property has been snapped up and painstakingly outfitted with the hooked rugs and Alken prints which Northern taste believes indispensable in a Southern hunting community. Even the cottages in town are rented every season. Why—aside from enterprising Dan Sands? The Middleburg country is no great shakes: much too vertical, rather laced with wire, and its few clean jumps unexcitingly low. Why, then?

Because (1) Middleburg is the Valhalla of the young married Valkyries, who drink, dance, and overbid from dinner table to next morning's meet. Here fledgling millionaires are completely exonerated from all affectations about work. Here, for simple physical considerations, dances are never given on the nights before polo game days. And because (2) Middleburg is society (Northern plus *young* Virginian) at its smartest—the smartness including a certain amount of flash.

Here hunt the Walter Wests of St. Louis (he secretary of the hunt), the racing Zieglers of "Burrland," Raymond Belmont, the young Charley Sabins of New York, Golf Champion Edith Cummings of Chicago, the Henry Whitfields ("Peter" Whitfield has served as whipper-in), the Arthur Whites, many a horseman and horsewoman who also hunts with the Orange County. Here are famous horse-dealers: Otto Furr and Louis Leith.

And here—conspicuously and intimately—is Miss Charlotte Noland's Foxcroft School, where at least one of the three R's is riding, where light hands offset light heads, where conversation is not of Worth but Whippy, not of Perugia but Peal. Here at Miss Charlotte's knee (on skewbald *Warpaint*) have ridden Barbara and Flora Whitney, Gertrude Sanford (sister of "Laddie"), Lucy Carnegie, Mary Clark (Mrs. Nelson Aldrich Rockefeller), Alice Devereux (Mrs. Rodman Wanamaker), Anne Colby (Mrs. William H. Vanderbilt), three daughters of William Woodward and one of Arthur Brisbane—as well as Virginia-bred Margaret Powers, Amanda Bryan, and Virginia Morton of Richmond, Nancy Dudley of Middleburg, the Harrises of Aldie, Warners, and Valentines whose company, though not specified in the curriculum, is often Foxcroft's most valuable course. On Thanksgiving morning, the Middleburg



Courtesy of Ruby Ross Wood

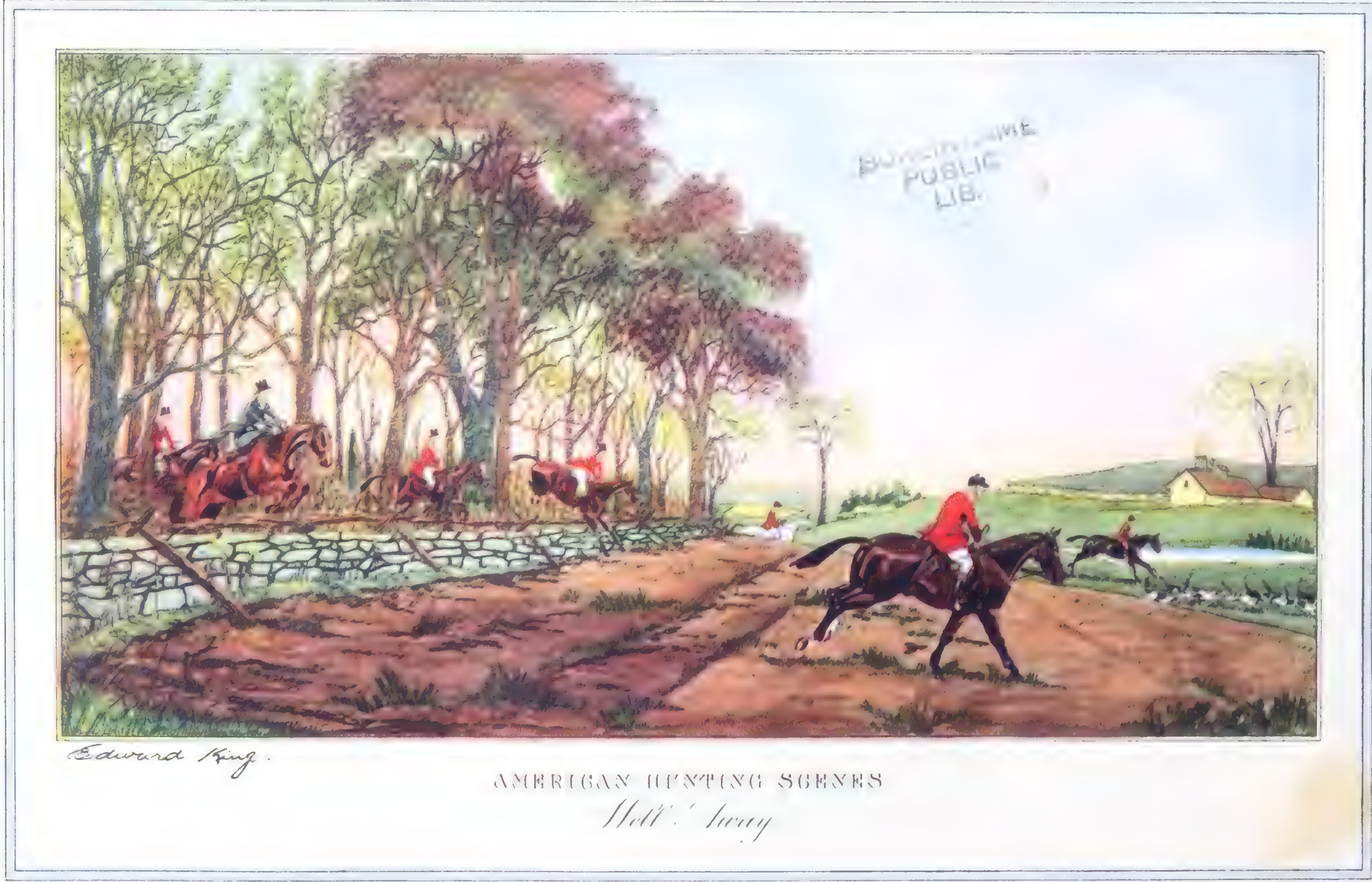
A CENTURY BEFORE THE YANKEE INVASION, VIRGINIA HAD ITS MANNERED HUNTS. THIS FRIEZE WAS DISCOVERED . . .

meets at Foxcroft and returns there for breakfast after the hunt. Foxcroft girls are hostesses then, and maybe a Randolph will make sure that a farmer's plate is well supplied with cranberries.

Tactful Warrenton

Now come through The Plains and down the road to Warrenton, that twisty, dangerous road now called, thanks to its enameled and gold-plated traffic, Jericho Turnpike. Warrenton itself is much the same as all other Piedmont towns: a new courthouse and an atrocious Methodist Church. Leave them, too; turn down Culpeper Street, past the office of Albert Perkins (with notable impartiality, Mr. Perkins will sell you radios or real estate), and keep on three miles out into the country—the Warrenton country.

This last, as Peter Whiffle would suggest, should be printed in fine and appropriate scarlet, for the Warrenton country is a hunting country and the Warrenton is a hunt. Notice the height of these whitewashed plank fences; notice the sturdiness of these chestnut post-and-rails; and notice the impregnability of these stone walls. Along the road, these occasional set-back alcoves in the fences are to permit clean jumping when the hounds cross over ("It isn't 'opping over 'edges which 'urts the 'orses' 'ocks; it's the 'ammer, 'ammer, 'ammer on the 'ard 'ighway.") If few Clothes Horse Riders dare these fences more than once, few farmers can afford the horses to stand the pace. The Warrenton, therefore, is made up principally of hard riders—"nasty steeplechasin' devils," who worship their horses passionately and have


Edward King.

AMERICAN HUNTING SCENES

Well! Away

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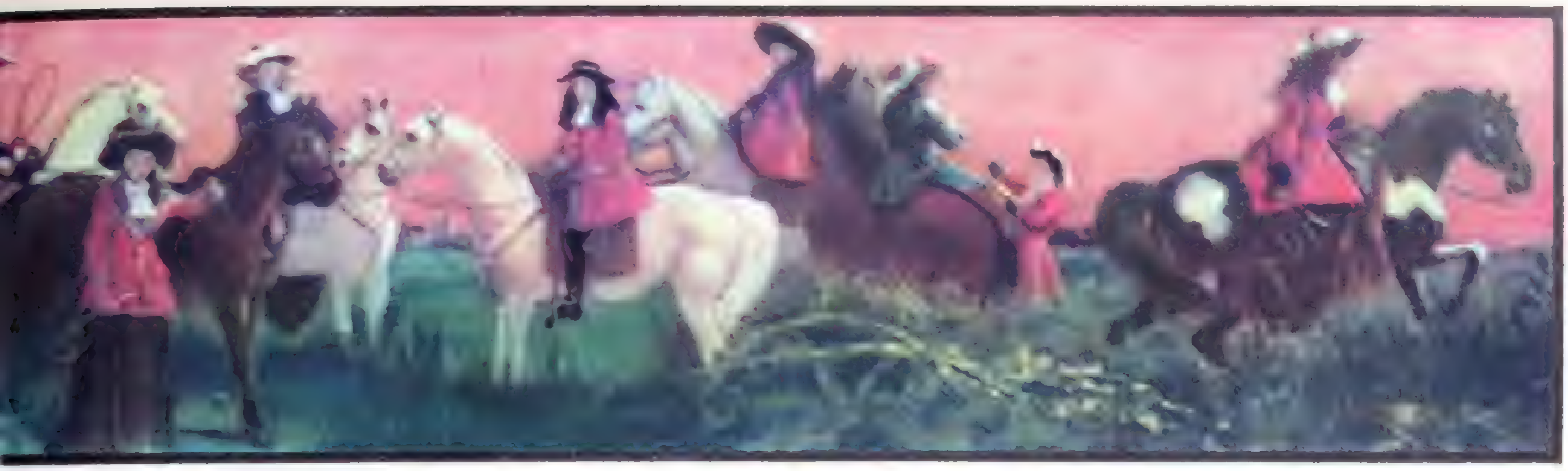
Courtesy of Derrydale Press



. . IN AN OLD VIRGINIA MANSION AND IS NOW IN THE SYOSSET, LONG ISLAND, HOME OF MRS. CHALMERS WOOD

sufficient money to indulge their great love.

Northwards as well as locally, the best-known of these are the Bobby Winmills of "Clovelly Farm." She, a superb side-saddle rider, is M. F. H., and Northern-born, envelopes Warrenton with more of a *Town & Country* atmosphere than it might otherwise enjoy or care for. There is a deal of picturesqueness about Mrs. Bobby Winmill, from the tandem which she deftly drives to the pet zebra which she imported for the delectation of her children, the terror of her stable, and the ecstatic gratification of smart-chart snapshotters. He is the latter of Gude, Winmill, brokers; he is also the Winmill whose horses ran fairly successfully at Belmont and Saratoga last season (white with yellow bars, yellow bars on sleeves, yellow cap); and he is the Winmill who made the North Wales Club safe from democracy.

Clovelly, in Devonshire, is across from south Wales, but the Winmills' "Clovelly" is next door to this North Wales Club. The heart of it was built in 1773 on an original grant from Lady Culpeper and stayed in the same family until Edward M. Weld discovered it. He bought "North Wales" and its surrounding 1,100 acres, stretched it out to seventy-two rooms, added a racing stable of forty stalls and a six furlong covered track, filled the cellars with $50,000 worth of liquors, and went broke. Cotton-cornering technique proved different from sugar-cornering technique.

The estate which had cost Mr. Weld $1,500,000 went at a forced sale for $400,000 to Charles Bond of Cleveland, the Bond of Bond's Two Pants Suits. Here Mr. Bond planned to rusticate indefinitely in squirish

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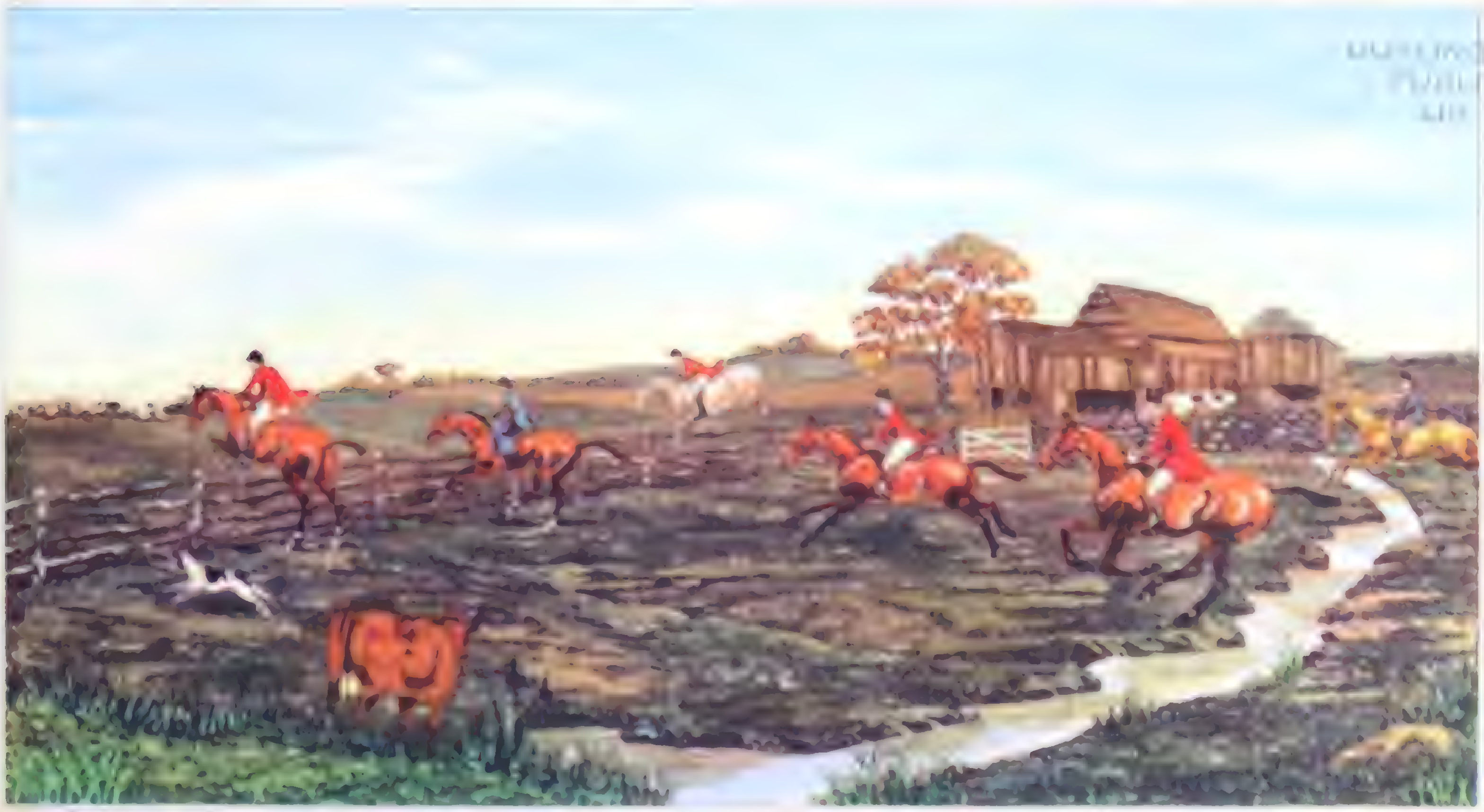


AMERICAN HUNTING SCENES

The First Flight

Courtesy of [illegible]

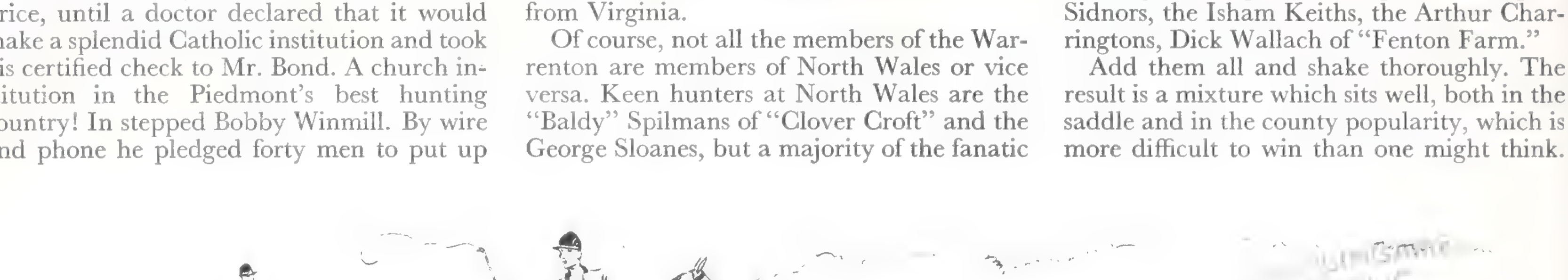
elegance, but the company which had just bought Bond's ultra-Potomac stores did not like the use of his name on the cis-Potomac stores which he still owned. His name, this company said, was not entirely his: neither, presently, was "North Wales," which again went up for sale.

Bidders were shy. Lower and lower slid the price, until a doctor declared that it would make a splendid Catholic institution and took his certified check to Mr. Bond. A church institution in the Piedmont's best hunting country! In stepped Bobby Winmill. By wire and phone he pledged forty men to put up $5,000 apiece, nosed under the wire ahead of the doctor, and thrust a down-payment check into Bond's hands. "North Wales," undented liquor and all, became the property of the Colonial Estates, Inc., Robert C. Winmill, president. Among its directors are Richard F. Hoyt (of Hayden, Stone & Co.), winner of the President's Cup, and John L. Johnston (president of Lambert Pharmacal Company, owner of the beautiful mare *Maid of Mars*); among its members (now forty-four; visits to their club cost $25 a day; all operating expenses are prorated) are David K. E. Bruce (Mellon son-in-law), Paul Pryibil (Whalen brother-in-law), Carl J. Schmidlapp (Chase Bank), Harvey D. Gibson (New York Trust), Frank M. Gould, Harold E. Talbott Jr. (Dayton Securities and Long Island polo), and Joseph Leiter (Chicago millionaire and husband of Washington's leading socialite)—thirty-three from New York, others from Chicago, Detroit, four from Virginia.

Of course, not all the members of the Warrenton are members of North Wales or vice versa. Keen hunters at North Wales are the "Baldy" Spilmans of "Clover Croft" and the George Sloanes, but a majority of the fanatic fox-hunters which make up a majority of the Warrenton's membership have a scorn for North Wales. Such a one is dapper old Jim Maddux, who was joint founder of the Warrenton in 1887 (an informal hunt had been started by two expatriate Englishmen, Captains Daniell and Assheton several years earlier). Jim Maddux also founded the Warrenton Gold Cup race, and it was Jim Maddux, who, in his sixties, bet that he could carry an open umbrella while riding a certain fractious horse and won his bet: the horse. Other non-North Welsh but ardent Warrentonians are the "Billy" Emorys, of the exquisite cedar-shaded house; he, smallish, weathered; she English, clear-eyed, tanned: so splendid her war record, she was commissioned honorary colonel in the English Army. The Emorys are experimenting with a new breed of hound: mixed English, Welsh, Irish. Potent, too, in the Fauquier County hunting, dancing, and dining are the Eugene Sidnors, the Isham Keiths, the Arthur Charringtons, Dick Wallach of "Fenton Farm."

Add them all and shake thoroughly. The result is a mixture which sits well, both in the saddle and in the county popularity, which is more difficult to win than one might think. It consists of consideration for "the poor devil over the fence"; in offering to pasture and water his stock when the drought has burnt him out; in fetching the doctor in your car when one of his drawers-dangling children chokes with the croup; in stopping your Isotta at the roadside while his scrawny cows come by; in tipping him "good morning" and asking after his folks; and it consists in—above all else—not letting this be known. Better than Orange County, better than Middleburg, Warrenton has this secret; perhaps because there is a larger percentage of

[*Continued on page 105*]



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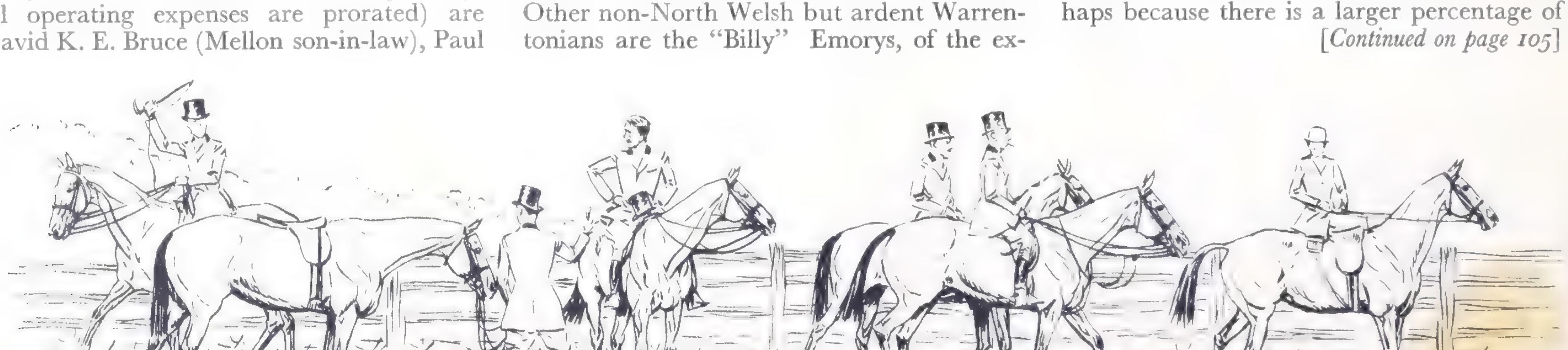

From "Foxhunting Formalities"

Paul Brown

The Bed Significant

Furniture's plight. The operations of Zalmon G. Simmons give pause to all the sad cabinet-makers.

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IF you ask the average American for a detailed description of the bed he sleeps in, he will probably be unable to oblige you. He can precisely visualize his cravats, his overcoats, his golf clubs, or his automobile, but his bed, and furniture in general, are merely nebulous conveniences in his mind. And the same thing is true of his wife. She who can dilate *ad infinitum* on the cut and color of her clothes retains only a feeble mental image of her bed. Unless, of course, she is an amateur of interior decoration, and there are less of these than life in a metropolis would lead one to suspect.

The peculiar fact is that the American public, which anxiously pursues certain definite styles in hats or trousers, shows no such anxiety in the matter of beds and chairs—there is no national furniture sentiment. In earlier periods the prevailing taste was reflected in easily recognizable types of furniture—Colonial or Civil War or Victorian or Mission. But an attempt to depict the modern American taste would result in a hybrid appurtenance which might be labeled fake, upholstered, geometrical Sheraton reinforced with steel tubing and garnished with Golden Oak.

People who set about equipping a home generally want furniture which is genteel as well as comfortable, but beyond this their ideas are unformed. Furthermore, when they visit furniture dealers they are apt to leave with the vague suspicion that what they have bought is not what they really wanted, and is too expensive at that. Nor is their suspicion unfounded; very few people obtain wholly satisfactory furniture at a price which seems wholly satisfactory. This is a sad state for any commodity market. It is bound to injure the producer. And indeed it takes no very minute inspection to reveal that the furniture industry is in a great dilemma. The case of the bed provides a splendid example, not only because it illuminates the difficulties, but also because certain recent developments in the bed business indicate the possibility of a solution.

For years the American bed has been marketed as any other article of furniture. The giant spool-turned structures which receive the tired young veterans of the War of the Rebellion, the Gothic and Empire revivals of the eighties and nineties, the tedious Mission, frippery *nouveau art*, and cumbersome Golden Oak—all these beds and their accompanying furniture were sold for the most part by retailers who obtained them from Grand Rapids. In this discussion we use Grand Rapids, which actually produces but 10 per cent of American moderate furniture (33 per cent of high quality period work), as a symbol of all the middling-to-high-grade furniture centers. Absorbed with production problems, Grand Rapids was content to forget the consumers, leaving the retailers to interpret the public demand. Had the retailers coöperated in an effort to determine public taste, everyone might be happy today. Instead, each dealer had his own curious practices, based on what he thought his clientele would bear. Small, unscrupulous dealers procured Grand Rapids' finest period copies, removed the labels, and sold them for rarities on Fifth Avenue. Others took only the Grand Rapids name, which they applied to *débris* pieced together in sweatshops no nearer Grand Rapids than New York or North Carolina.

Had the toleration of these frauds been its only fault, Grand Rapids would have little to regret. But it erred majestically by facing the vast middle strata of furniture dealers with such meek humility as is unknown in any other great industry. Many retailers discovered they could dictate to Grand Rapids; immediately they abused the privilege. In their own territory they assumed the rôle of arbiters of furniture, forcing their public into frequent changes of style and type, forcing Grand Rapids into supplying their shifting demands at the expense of stability, quantity production, and general efficiency. Fifteen years ago, for instance, Grand Rapids found the use of five major woods sufficient for its purposes; today, due to the retailers' helter-skelter demands, it must be prepared to use seventy-five varieties.

Enter Mr. Simmons

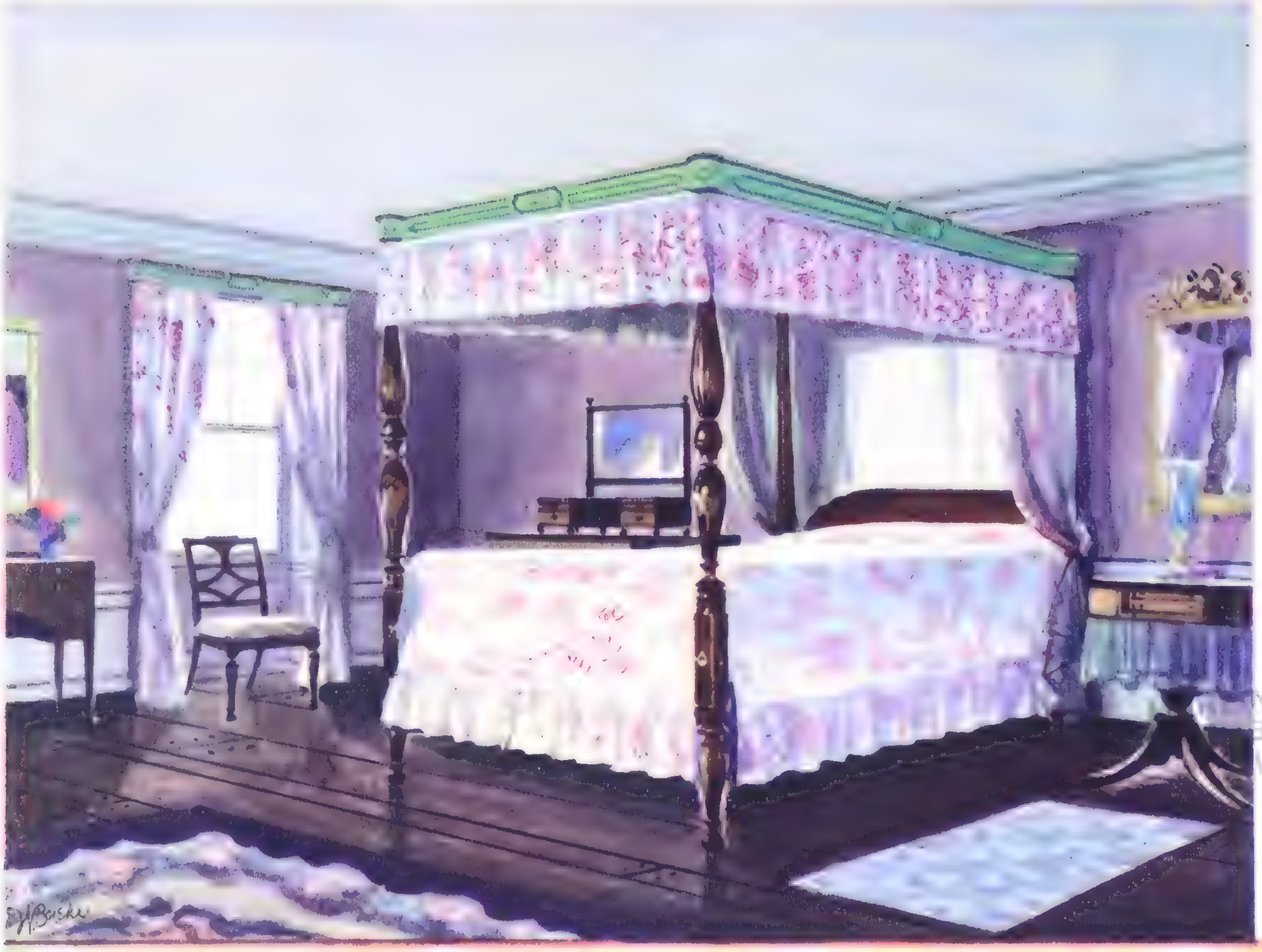
Grand Rapids has many difficulties: modernism, which it has generally repudiated; High Point, North Carolina, which manufactures cheaper goods at low cost; Chicago, center of upholstered furniture, in which Grand Rapids does not specialize; the interior decorators, who cling to importations. But the seers of the furniture city have gradually come to conceive of their most pressing difficulty as the necessity of obtaining the cooperation of the retailers. These are a disorganized, disparate host whose disconnected efforts stand between the American public, which might be made conscious of what it really wants, and Grand Rapids, which might satisfy those desires with order and profit. In other words, the furniture manufacturers find themselves the victims of an undistributed industry. The degree of their affliction has been reflected in the post-War record of declining sales, reaching a virtual nadir during the present depression, and the upcurve of unsold goods which one school of Grand Rapids thought explains as "over-production."

Squarely in the midst of these perplexities has arisen the subject of the bed. Specifically, the Simmons metal bed. Years ago, in Kenosha, Wisconsin, the Simmons family began making beds. Since then the concern has gone through several corporate changes, but its direction has remained with the Simmonses. They were not long in discovering that metal beds were easy to make (Simmons has bought thousands of discarded railroad rails) and could be sold extensively. Just how extensively was a lesson which they learned in conjunction with the J. Walter Thompson advertising agency. The imaginative Thompsonians convinced Simmons that if aspirin, soap, and other healthful agencies could be advertised profitably, so could sleep. Presto, there appeared attractive Simmons posters displaying the superior relaxations of lovely night-clad ladies on Simmons springs. The names of Simmons Beautyrest and Deep-sleep mattresses were suavely implanted in the minds of the citizenry. The most eminent celebrities endorsed sleep. Simmons sales and prospects mounted; the company boasted of 20,000 accounts on its books.

Then Simmons was the victim of what is well known as one of the most disastrous speculative movements in the recent history of Wall Street. Between May and September, 1929, Simmons stock went from about 93 to 188. In June, 1930, it stood at 33 and in October was hovering around 20.

But despite this gruesome history, the fact seemed obvious that Simmons could sell beds. With national distribution bolstered by trade-marked advertising and sixty-six branch warehouses stocked with standard lines, it had broken away from the Grand Rapids tradition. It showed a net profit in 1928 of $4,275,000, and in 1929, the year of its greatest speculative woes, it increased its sales 37 per cent over the previous year. It demonstrated conclusively that the public would buy standard lines of furniture nationally marketed, and the Simmons line is surely varied enough to avoid any accusations of robbery.

Thus the newest significance of the bed—a harbinger of what may be done with furniture. In Grand Rapids, where Simmons has long been regarded as an enemy, there is a growing sentiment to the effect that an enemy's technique may be worthy of adoption. Such speculations assumed a very definite character when Simmons carried the



EARLY AMERICAN

On these pages appear representative American bedrooms, historically researched and painted by Walter Buehr. The room to the left was inspired by one which might have been found in Haverhill, Massachusetts, in 1818, and which survives in the American Wing of the Metropolitan Museum of Art.

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DARKEST VICTORIAN

This gloomy black walnut and marble-topped retreat is a composite of Grand Rapids' grandeur of the seventies and eighties. The New London humorist, Captain Walter Traprock (George S. Chappell), has described one of the most characteristic features of this period as "open plumbing openly arrived at."

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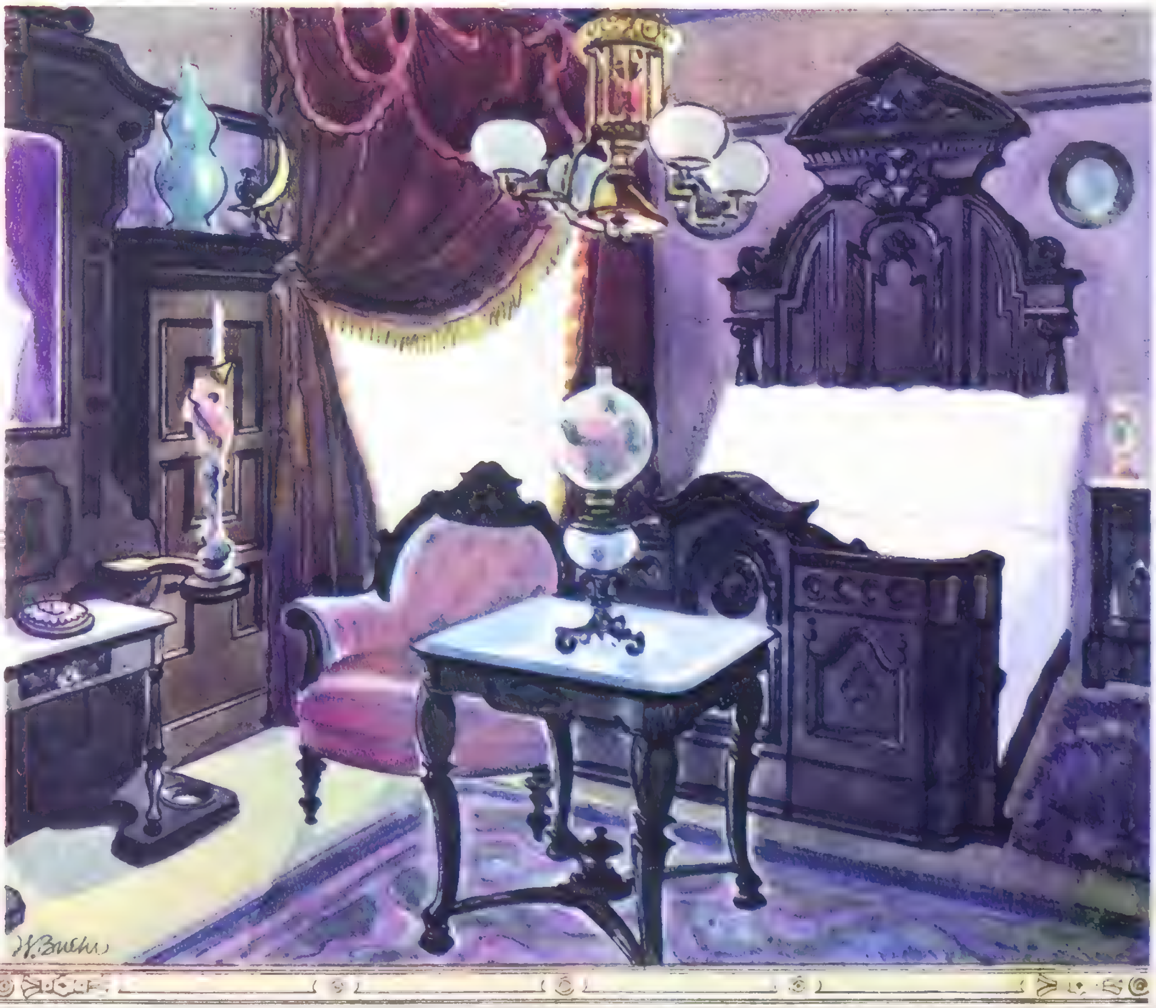
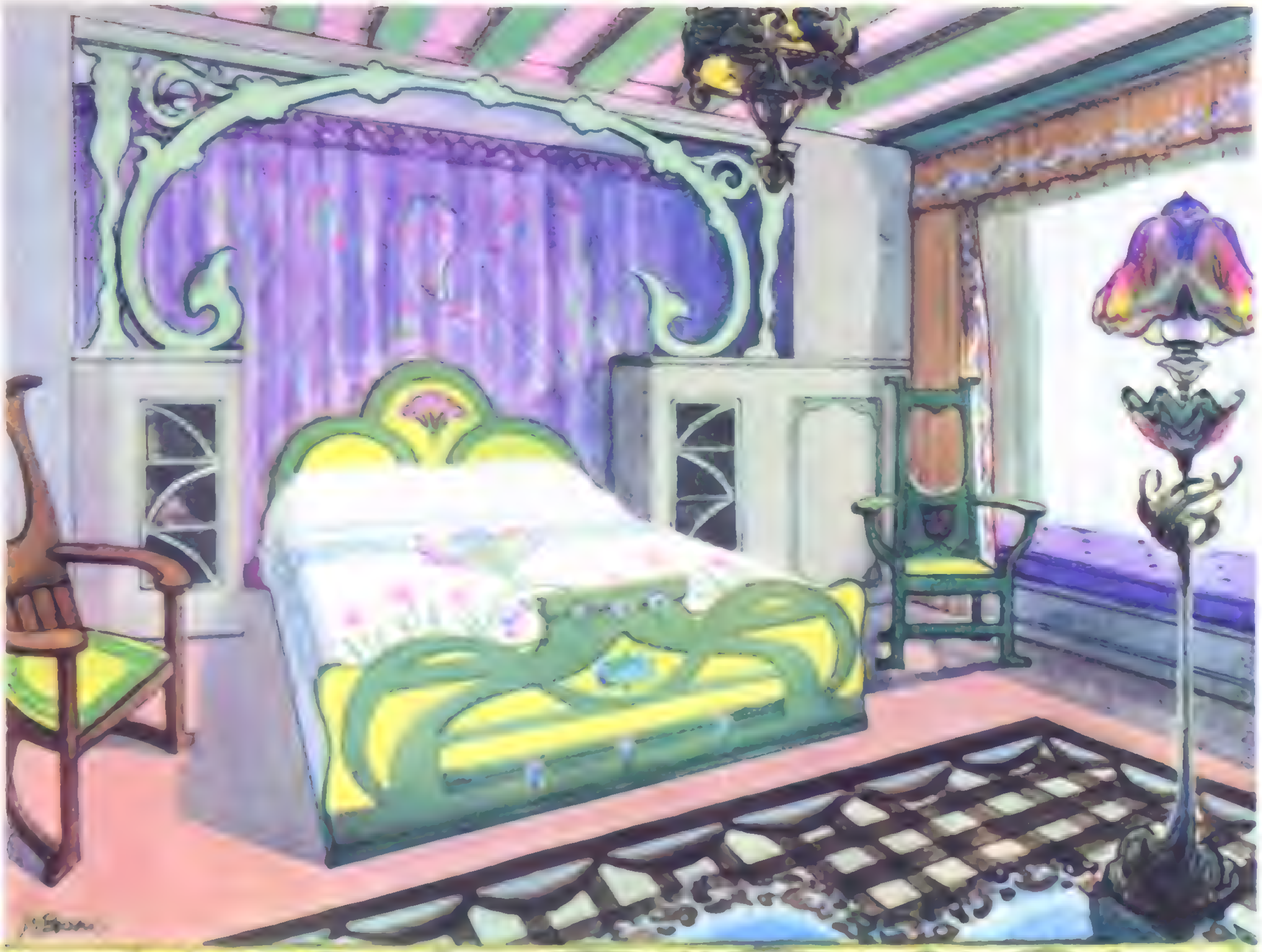
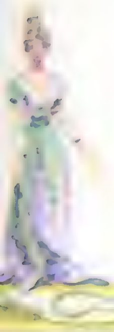


ART NOUVEAU

The esthetic heyday of Burne-Jones and Oscar Wilde devised such floral fantasies as this in answer to the lugubrious Victorianism which is pictured on the opposite page. Mr. Buehr assembled this hideaway after considering the home decoration pages of the Ladies' Home Journal for 1899.





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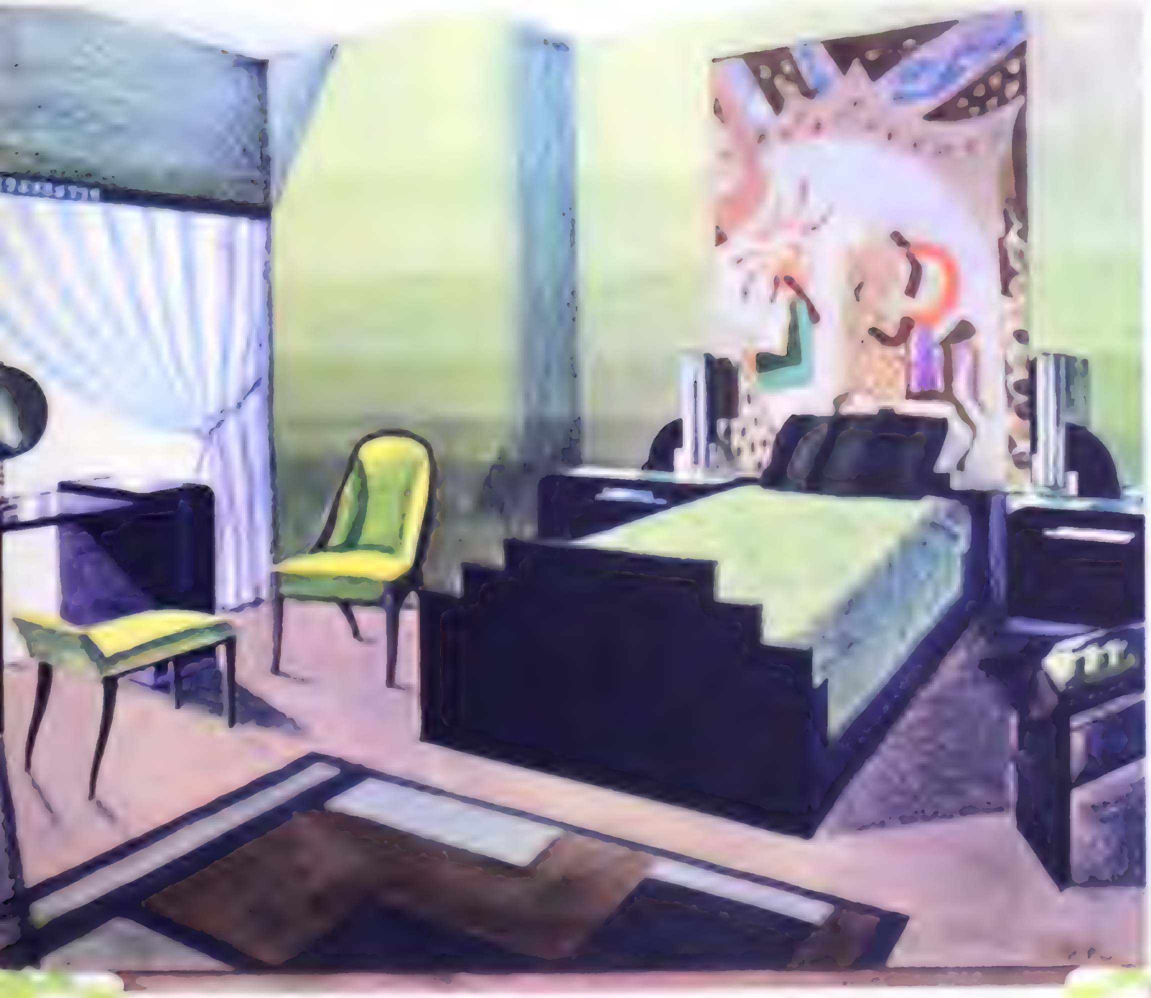

CONTEMPORARY

The ideal of the modernists is a structural and linear simplicity which is by no means new. This depiction of a style which has made great headway on the Continent and is gaining in America includes a panel by the French architect and designer, André Lurçat.

A VICTORIAN COZY CORNER, IDEAL FOR "SPARKING"

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AN ORNAMENTAL BEDROOM WITH THE SPANISH MOTIF

THE CHASTE BOUDOIR OF THE HISTORIC GIBSON GIRL

war into Grand Rapids by its recent purchase of Berkey & Gay, one of the city's oldest and biggest plants with an annual sales volume of $9,000,000. Presumably, Simmons intends to sell wooden furniture as it has already sold metal beds. If this new left wing of Grand Rapids eventually prevails, the day of individual style dictation by thousands of retailers is doomed. Perhaps they can help themselves by closer coöperation with the public, their fellow retailers, and Grand Rapids. An attempt at such a happy unity has already been made by a style-fixing committee composed of delegates from the manufacturers and retailers, the trade journals, and consumers' magazines. Certainly something is necessary which will simplify the task of the manufacturer and arrest the public attention.

Because of this fact and because no great enterprise can afford to ignore the cycles of fashion, Grand Rapids may ultimately be forced to capitulate to another of its enemies —modernism. Those who object most strenuously to the brusque, angular, garish aspect of the most wayward modernistic experiments are usually the last to realize that they already have one completely modernistic room in their homes. This is the bathroom. It is a constant reminder that all great architectural trends have begun by catering to human convenience. Already the decorative engineering which dominates the bathroom is reappearing in the kitchen, and in Holland and France built-in beds are by no means outlandish. Six years ago Lee Simonson designed an apartment in which there were only six movable objects.

Certainly when the public discovers how serviceable and how sleekly handsome modern furniture may be, based on metallic strength and linear simplicity, the market for elaborate fragile period reproductions will feel the stress of new competition. The possibilities of such a discovery for Grand Rapids can only be imagined. For the modernistic style has been developed from the point of view of extreme ease of manufacture and adaptability to modern structural methods. And just as Simmons now has a better market for its metallic inventions than Grand Rapids for its conservative cabinet-made articles, so Grand Rapids may eventually regain its eminence by keeping up with the epoch. But if it learns no other lesson from modernism than the elimination of the unnecessary (i. e., the unprogressive retailer), it will have benefited inestimably.

UP-TO-DATE GRAND RAPIDS, SATINWOOD AND MAHOGANY

EARLY 20TH CENTURY GOLDEN OAK BEDCHAMBER

MODERN AMERICAN ROOM, FEATURING MAKASSAR EBONY

A Burlesque Tyrant

Is Labor when it ascends the throne. An anthology of rules and by-laws hat cause economists to smile, that make employers damn the unions.

EVEN so dully worthy a subject as Coolidge economy became a dinner able tidbit when Brigadier General Herbert M. Lord began advocating the use of longer pencils by government employees, eliminated he blue stripe from mail bags as reckless xtravagance, and demanded that all government officials stop writing useless letters, as etters cost twenty-six cents apiece. Equally delightful for conversational purposes have become union practices—at least equally delightful to the onlooker. On the employer heir humor is somewhat lost.

No one, even the most old-fashioned of mployers, would deny Labor's right to rganize nor deny that often Labor's only bulwark against exploitation has been the union. No one can help but sympathize with he stand taken by the unions in many an industrial crisis, as in the great clothing strike of 1910, which broke the back of sweating. For when there are two men to every job, hen assuredly the union is that much talked of Knight in shining armor leading Labor on o the dawn of a new day.

But let the economic cycle revolve to where there are two jobs for every man, then Capital finds itself dethroned; then Labor, ecognizing no law but its own law, plunges rom extremity to extremity and thus into nevitable absurdity. Denying any outside authority, even that of the U. S. Constitution if it clashes with union demands, enmeshing itself in endless rules and bylaws of its own making, the union becomes as tyrannical as ever Capital was—and infinitely more absurd.

Following is a cross section of various rulings and ukases solemnly promulgated by Labor. These have a way of falling into disuse during hard times like the present, of being fanatically enforced during periods of prosperity. We offer them here not as an attack on Labor, but rather as a criticism of the more extreme union practices.

Operative Plasterers and Cement Finishers International Association of U. S. and Canada.—This union (the story is a classic) exacted a $19 fine from each of its Italian, Hebrew, and German members working on St. Patrick's Day.

United Brotherhood of Carpenters and Joiners of America.—All unions hold as sacred their rights to a job. A short time ago in the Seaboard Air Line Railroad Shops at Jacksonville, Florida, a gas-electric motor car needed repairing. A machinist with a hammer, a screw driver, and a pair of pliers could have done the work in twenty minutes. But he was not allowed to. Three men had to travel out to the job with him—a carpenter who took five minutes to remove the floor board, a pipefitter who took four minutes to remove one pipe, an electrician who disconnected wires. The machinist, when they were through, did five minutes' work on the engine.

United Association of Journeymen Plumbers and Steamfitters of the U. S. and Canada.—Not always (as above) are union family relations amicable. If water pipes are to carry water for boilers they must be installed by steamfitters; if they are for toilets, hand basins, etc., they must be put in by plumbers. The Hell Gate Power Station recently was confronted with a horrible dilemma: pipes it wanted to install carried water for both boilers and bathrooms. When it gave the work to steamfitters, the plumbers called out all their men working for the company. When it switched to the plumbers, the steamfitters called out all their men.

A job is made by the following rule: every two plumbers must have a helper who can touch the tools only in order to hand them to the plumbers. Since almost all pipes are fitted with screw joints, practically all of their time is spent by one plumber holding up the pipe while the other twists it into place. The helper's part is to earn approximately $7.00 a day for restful watching.

International Brotherhood of Teamsters, Chauffeurs, Stablemen and Helpers of America.—Union bookkeeping money is saved by the efficient teamsters who rule: "On or about the tenth of each month it shall be compulsory on the part of the employer to examine the dues book of such employee. If union dues are not paid, the employer shall collect dues each week until all are paid and remit the amount to the union."

And union money is made by their requirement that the scenery of a show, whenever it is moved to another theatre, be carted. In case it is only to be moved across the street, the procedure is to load the scenery on a truck, drive it around the block, and unload it on the opposite sidewalk. Recently a Broadway show was thus moved solemnly from the Royale Theatre to the Masque, which stands ten feet away.

Brotherhood of Painters, Decorators, and Paperhangers of America.—Four and one-half inches is the maximum width of paint brushes allowed in Cleveland. This prevents painters from doing "too much" work.

Painters in Cincinnati claim the right to apply all coats of paint on the job. On the Carew Tower now being constructed, some material was delivered with two coats of paint on it. Four were necessary. The painters are applying four in disregard of the original two.

Every painter using a paint spraying machine in Chicago must be paid $1.00 above the regular union scale, not because the work is harder, but because it is more easily done. If several paint spraying machines are used, then an engineer must be hired at $13.00 a day. His entire job is to turn the current on and off. In Manhattan the union forbids the use of all paint-spraying machines.

International Brotherhood of Electrical Workers.—Union men will install no product that they have not wired themselves. They strongly object, for instance, to the "pigtail socket," a common lighting socket with two wires coming from it like a small girl's pigtails. These wires are soldered in at the factory. When confronted by this contrivance on a certain job, the union men wanted to dig the wires out of the socket and solder them back. Restrained from doing this, they compromised by cutting the wires and splicing them together again with tape, which took enough time to make up for the time they had lost by not being able to wire the sockets in the first place.

Any member who hangs more than twenty-five fixtures a day is (say the rules) fined from $50 to $500. The average man can easily hang forty fixtures a day.

Whenever temporary lighting is installed on a building, the union demands that a skilled electrician be on duty. His job is replacing electric light bulbs. (On the average one blows out every two days.) His pay is (in New York) $13.20.

International Association of Bridge, Structural and Ornamental Iron Workers, Locals 11 & 45.—Whenever steel reinforcing rods are put into concrete, union rules require that a foreman be on the job until the last concrete is poured. The rods may be put in weeks or even months before the concrete is poured. But during these weeks of waiting the foreman earns about $100 a week for a job which consists entirely in lending his presence to the scene.

"When work is of such a nature as to require the service of one man only, then

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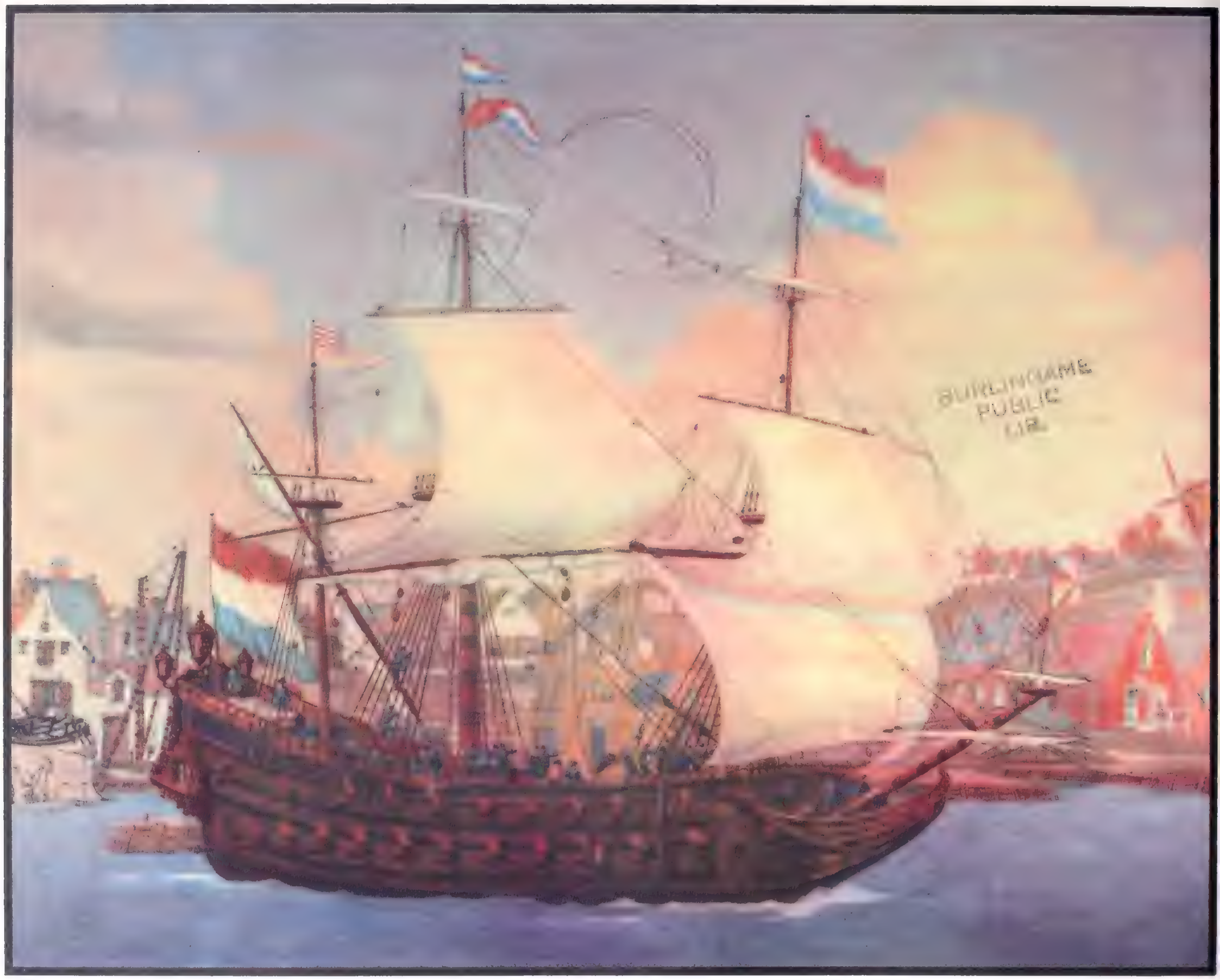

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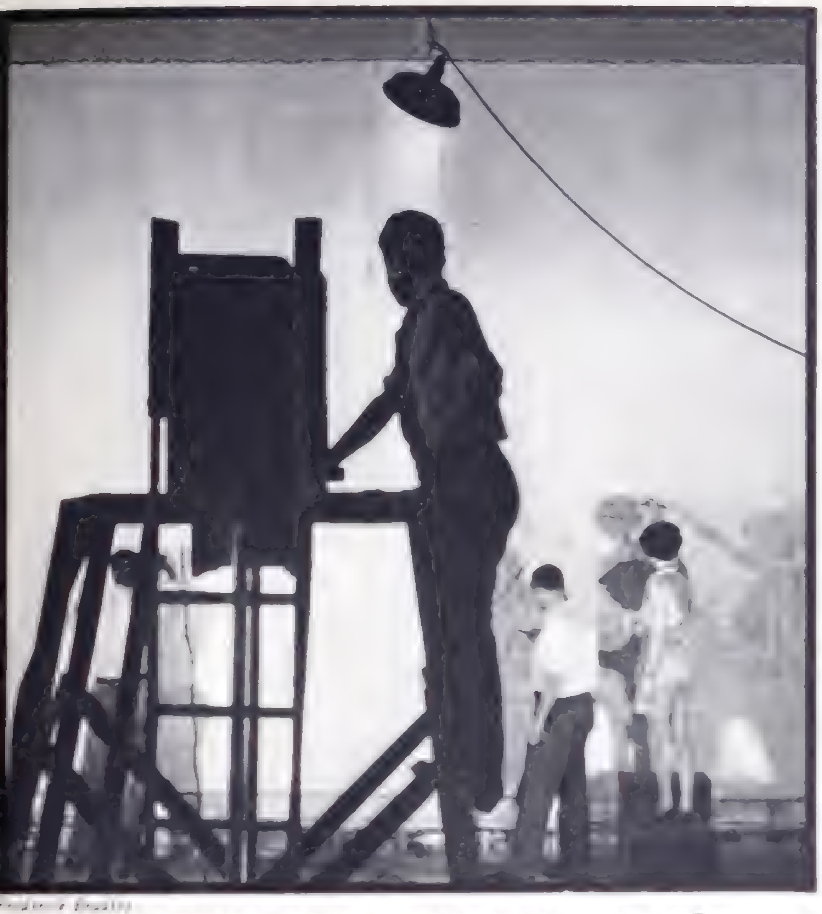
Methodical Muralist

For the New York Trust, Mr. Coale wins an artistic victory over time and space.

TWENTY-SIX hundred square feet of painting is an assignment upon which a conscientious artist might well spend two or twenty years. Yet the new building of the New York Trust Company (at 1 East 57 Street, Manhattan) contains a historical mural of Manhattan's waterfront, thirteen by 200 feet, which was completed six months after Griffith Baily Coale began his preliminary sketches. Nor is it merely a spacious daub. It is a meticulous document, a handsome decoration, and Mr. Coale's esthetic conscience is in it.

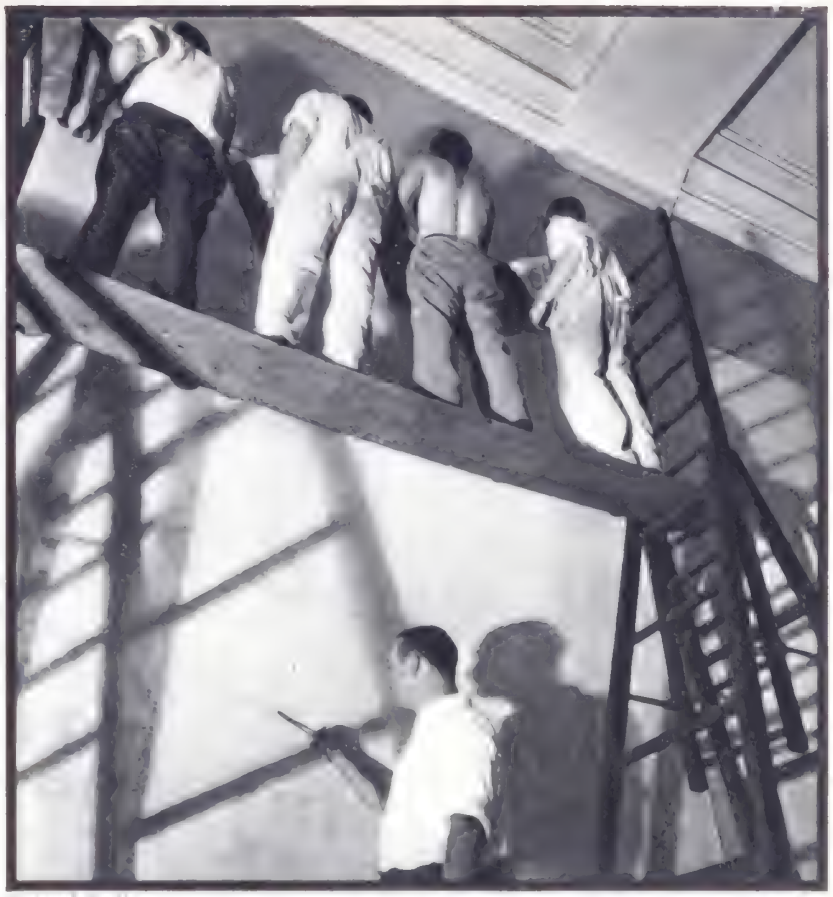
The principle which allowed Mr. Coale to paint 2,600 square feet of murals in six months is simple: he knew exactly what was going on the walls before it went there. But if the principle was simple, the practice was elaborate. There were innumerable sketches of Hendrik Hudson's *Half Moon,* of ponderous Dutch and British men-o'-war, of early schooners and latter-day liners, of the shifting backdrop of New York's years, ending with the downtown skyscrapers. Researchers helped Mr. Coale with details; windmills or gallows or the Dutch burghers strolling on the quays. In the matter of ships he depended largely on himself—he is the erudite secretary of the Ship Model Society and the Marine Museum of the City of New York.

From the sketches a series of key paintings was developed—a miniature replica of the murals-to-be. Herein lay the factor without which Mr. Coale's feat would have been impossible. Mr. Coale works in the tradition of Puvis de Chavannes; his paintings are compositions in flat, definite tones and do not involve incalculable blends and shadings. Thus each time he achieved a satisfactory tone, he was able to set aside a sample labeled with the places in which he had used it. When the key paintings were finished, he had samples of every tone and a record of their locations. Historical specialists next gave the key paintings a final check, and they



derick Bradley

THE VENERABLE MAGIC LANTERN PLAYS A NEW RÔLE



Frederick Bradley

THE CHARTED APPLICATION OF A TON OF COLOR

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were fitted and approved in a tiny scale model of the New York Trust Company. Mr. Coale was ready to execute the actual murals. Observe that they would merely be enlargements of the key paintings; at this stage the artist had determined everything, even to the color of a Dutchman's boots.

The key paintings were placed in a magic lantern and their twice-magnified projections were traced, forming a series of line drawings of the entire project. Mr. Coale next engaged the barn-like third story of the old Astor library, hung the walls with enormous empty canvases, and hired some fourteen assistants, carefully selected from many applicants. Most of them were graduates of the Yale School of Fine Arts, anxious for mural experience regardless of salary. Using the magic lantern again, he projected the line drawings six times enlarged (thirty-six times in area) upon the canvases. With scaffolding, he and his crew traced these giant projections.

With the murals thus rendered in huge line drawings, it remained to apply the color. The crew, under the direction of an adept young lady who has assisted Mr. Coale for five years, mixed great batches of paint to match the samples kept with the key paintings. Then they worked days and nights putting the indicated colors in the indicated places. Mr. Coale himself frequently worked three nights a week until dawn. There were no stipulated hours, no time clocks, yet the crew often appeared evenings and Sundays.

Griffith Baily Coale is not the only muralist whose work involves the projection, flat tone technique. But the strictness with which he observes it, insisting that there be no experimentation or reworking between the key paintings and the finished murals, is unique. A direct descendant of the Colonial painter, Benjamin West, he is the son of a Baltimore banker and yachtsman. Six years ago, after foreign study and considerable portrait painting, he arrived in New York where he knew only two people. The fact that his murals now embellish the New York Athletic Club, Lee Higginson & Co., and numerous eastern hotels he traces back to an encounter with a hotel promoter who, in a city loud with braggarts, was impressed by Mr. Coale's indisputable knowledge of ships. Mr. Coale is very far from rich; his many-handed process is too expensive. Fortunately he is robust, else he could not have survived. Undoubtedly big business appreciates fine decoration. But it wants it quickly. And modern decorative artists have had to meet the necessity.

Frederick Bradley

PAINT MIXING   BELOW IS PRESIDENT A. L. GATES OF THE NEW YORK TRUST

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Danger at the A. O. Smith Corporation

In its great Milwaukee plants, where automobile frames are made without robots and sold without salesmen, Mr. Stuart Chase finds the supreme example of the automatic function—and a threat to the old industrial *régime*. Here, where the Engineer is king, Lloyd Raymond Smith builds to scrap, and then builds again. All industry watches his ruthless experiments.

[*This article is contributed to* FORTUNE *by Mr. Stuart Chase.*]

JEREMIAHS of monumental profundity wring their hands and tear their beards lamenting the conversion of men into robots in the age of the machine. They adduce no figures, but the impression given is a wholesale operation, affecting nearly all of us. Elsewhere I have sought to verify, quantitively, the strength of this indictment. With the Census of Occupations as a base, I found that of 42,000,000 Americans gainfully employed, not more than 10,000,000 spent their working hours in close contact with machinery. Further analysis discloses that only about 5,000,000 can properly be called robots at all in that they surrender their personalities to the machine.

The other 5,000,000 either are handicraft men and other helpers about factories who have little to do with machinery, or—and this is important—they themselves *dominate* the mechanism, and thus let some of its energy into their own veins. Air pilots are not robots by any stretch of the imagination, and neither are operators of motor cars, locomotive engineers, or structural steel workers. Lastly, of those who might be termed robots—some 12 per cent of the gainfully employed—the number is actually declining, and for two reasons. Due to technical improvements in output per man, factory employees are growing fewer. Second, the automatic function in industry is steadily gaining ground, displacing machine-feeders and nut-screwers by skilled designers, inspectors, dial-watchers. A large number of so-called robots give way to a small number of workers with reasonably intelligent and independent jobs.

Perambulator to automobile

In order that the Jeremiahs may see exactly what I mean, I take pleasure in presenting in some detail the most advanced single exhibit of the automatic function in the world. The honor belongs beyond peradventure to the mill which makes automobile frames practically by itself on the premises of the A. O. Smith Corporation in the city of Milwaukee. And I take pleasure in presenting one or two additional aspects of this extraordinary company which ought to give the machine age philosophers, both gloomy and cheerio, enough to reflect on for quite a while to come. This plant not only threatens to end the scourge of the robot; it threatens to end industry itself—in the form that we have hitherto known it. There is a mixture brewing here which, if it explodes, will make Milwaukee more famous than ever did its beer.

Photos by Rittase

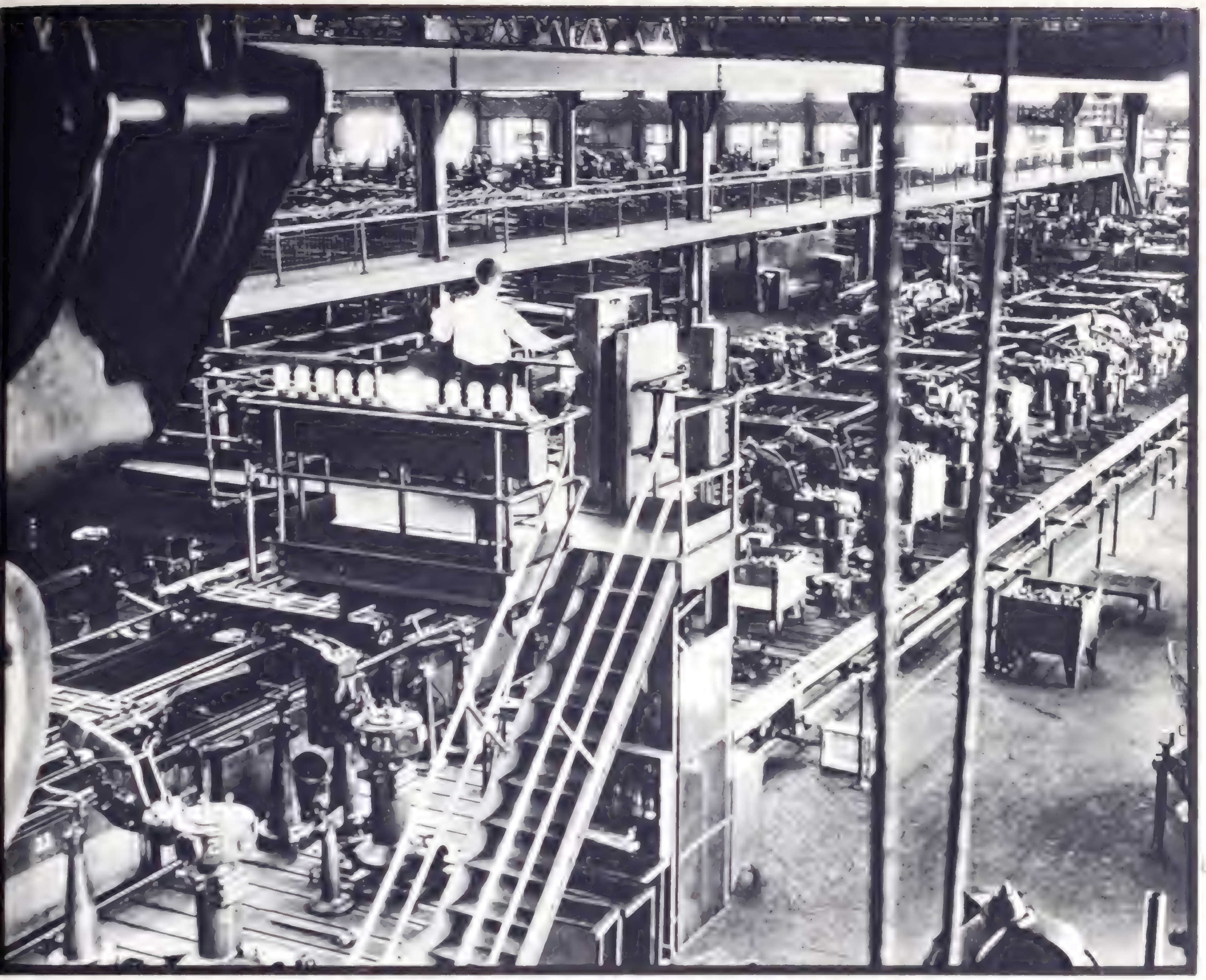
LLOYD RAYMOND SMITH

A steelman, son and nephew and grandson of steelmen. A dynamic citizen of Milwaukee. Of him, when the University of Wisconsin awarded him the degree of Doctor of Laws, Glenn Frank said: "Because you have brilliantly dramatized the dependence of sound industrial development on sustained research; because you have brought to creative engineering a mind singularly emancipated from tradition; because in the readiness with which you have discarded obsolete methods and faced innovation unafraid, you have provided an example that should not be lost on those of us who bear a like responsibility in university, church, and state; because in the midst of technical triumphs you have shown a sensitiveness to their social impact on the lives of men and women who work; because you belong among the pioneers of a technical age in which machines shall lift the burdens from the backs of men."

The company was founded over half a century ago with the commendable purpose of fabricating baby carriages. In due time, babies were abandoned for bicycle riders. About 1900, Mr. A. O. Smith, the son of the founder, gave the first recorded example of that policy to which the company now dedicates itself. He had been following the early flounderings of the automobile. Bankers and other sensible folk knew it for what it was—a crazy, impracticable contraption. Not so Mr. Smith. He was convinced that the motor car had a future. Some day it would be made in large quantities. It would need a frame on which its engine would rest. That frame might be made of wood, iron, or pressed steel. He pondered over these three alternatives as the one-lungers gurgled, backfired, and frightened live stock out of its wits. He concluded his ruminations in favor of pressed steel. With a group of men from the bicycle shop, he proceeded to design and erect special machinery for making steel frames, *a full year before there was any call for them, or indeed any evidence that America would take to making automobiles in a determined way at all!* He had thought out his problem, designed and set up his equipment in advance of the world's recognition that there was a problem. This is the sort of thinking which is coming out of Milwaukee today.

The crazy idea

In 1902, the orders—more or less on schedule—began to arrive, the machines were put at productive labor, and the first frames shipped out. They came from the shop at the rate of ten per day, and Mr. Smith offered a house and lot to the foreman who could get out twelve. (Now they are coming at 10,000 a day.) It was hand and machine work, much of it robot work, if you please. The business prospered. The grandson of the founder, Mr. L. R. Smith, took the helm his father laid down. He looked at the rows of men handling heavy steel side bars, performing a single operation. "It's stupid," he thought, "and wasteful. It costs too much; it's bad for the men. Men have too



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HERE ARE MADE FRAMES FOR CHEVROLET, CHRYSLER, BUICK

. . . and many another U. S. automobile. The entire line is controlled by the man on the bridge. Behind him, one of the twelve bulbs is now gleaming white. This means that trouble has appeared. The long, intricate assembling process completes itself practically without human aid.

much innate ability to be condemned to such work as this." He turned to his engineers, a growing corps and one upon which he came more and more to depend. (He is himself an engineer.) "Could we design a machine to do this whole job automatically, a machine as big as a factory, to pick up the raw steel and throw these things out at four or five thousand a day? I know it is a crazy idea, but can we do it?" His engineers had learned to expect anything from this man. The T squares spanked and the drawing boards groaned. Ten times the plant was built on paper, and the cost of the crazy idea had mounted to $1,500,000.

Finally, after incredible labor and some of the boldest mechanical thinking ever done on this planet, a plan was evolved which looked as though, by the grace of God, it might work. Bankers were called in and their advice asked. The rosy-gilled fraternity was petrified, and advised, whatever it was, not to do it. They were thanked politely, and the metamorphosis of paper into concrete and steel promptly begun. Fortunately, money in the home stocking was still available.

Beyond the technical incredibility of the project was the whole question of the potential market. Suppose the plant could be built, who was to buy frames in lots of 7,000 each and every day; 2,000,000 frames a year? Competitors were in the field, and in 1916 only 1,500,000 motor cars were manufactured the country over. The blueprints called for more frames than there were engines to mount on them. But even as his father had sensed the beginning of an industry in 1905, the son sensed the post-War automotive boom. "We were aiming at million-lot machinery, million-lot production, and million-lot costs," and lo! the market came to meet this million-lot expectancy. The plant was built in 1920. Soon afterward the roaring twenties, building 3,000,000, 4,000,000, 5,000,000 motor cars a year, were in full swing and demanding Smith frames.

By the time the mill was built, $6,000,000 had been sunk in it, including the drawing paper. Would the damn thing work? The blueprints were optimistic, but how about Madam Nature? Here were 552 separate operations to be performed on every frame. If any one of them went wrong, the whole gigantic mechanism might jam.

I will never forget that moment when it became necessary for me or an associate to throw on the power. Both of us were stalling, one waiting for the other. Neither can remember clearly which one threw the switch. But for an hour and fifty-seven minutes, the unit functioned without a hitch. Then it shut down for want of raw material!

The damn thing would work. It has been working ever since. And, of course, for all the palpitations when the first switch was thrown, Mr. Smith and his engineers *knew* it would work. Too much sound research had already gone in to permit of failure. It was no miracle nor are the subsequent achievements miracles, spectacular as they appear. It is the sort of thing to be expected when engineering takes the place of rule of thumb, and its possibilities developed *to the limit.* In due time production was stepped up from 7,000 frames a day to 10,000—and the end is not yet.

One goes through a guarded gate into the great enclosure upon which the company's property stands: a company which sells $60,000,000 of tonnage products a year, moving out on 30,000 freight cars. The buildings are not huge but squat and grim, full of noise and full of power. There is an air of spaciousness and cleanliness, but no hint of lawns, flowers, and the tra la la la school of mill design. Clean, muscled, and stripped to the waist is the dominant note. But stop a moment. What is this partly finished building of peculiar steel construction with black granite base and fluted aluminum creeping up over the stanchions? It is the new Research Building, equipped to house 1,000 engineers. It could have been built for $400,000 but is costing $1,500,000. And why, pray, the extra $1,000,000? It is expended to make as just and lovely a temple to the god of science as devoted hands have reared to other gods in other ages. Engineering research is the chief business of this company. Frames for motor cars, pipes for oil fields, pressure vessels—these are by-products.

Quadrille of the dragons

We enter a door in one of the squat mills and are suddenly drowned in sound. We are in a room perhaps 300 feet long and 200 wide, with walls of glass. Its floor is one solid mass of glittering steel, a thousand shapes which rush and stop, rise and fall, advance and retreat, dancing to some gigantic rhythm, yet to a counterpoint which sets up no vibration. One quadrille offsets the other, leaving the building without a tremor. The multiplicity of moving shapes confuses us, but as we mount a platform, a sense of discipline, of patterned harmony, becomes apparent. Wide, clean aisles separate the moving groups. There are no towering mechanisms, no belts; the whole upper part of the building is clear. The largest single shape is near the door by which we entered. It is also the noisiest. With drum-shattering gasps it is solemnly picking up pieces of steel, fitting them to a pattern, dropping the unit down for some attention (the seat of the noise apparently), raising it up, placing it on a little carriage of delicate steel rods . . . carriage after carriage, which rush and stop, rush and stop, rush and stop, in our direction.

Comprehension dawns. Upon each carriage is obviously a motor car frame; the hissing mechanism has assembled the various side bars and cross bars which compose it, and the dropping motion—our guide assists us here—is the automatic insertion of 100 rivets into their waiting holes. The assembled frame moves towards us for the job of heading the rivets and so locking the parts finally together.

As the frames advance and stop, two batteries of steel dragons, with jaws like those of stone Aztec serpents, move forward upon them, one from either side. Their round metal eyes glitter, their jaws are distended to cavernous proportions, they nuzzle into their victim's vitals, select each a sought-for rivet, then slowly, relentlessly, even softly, the great jaws close. The final crunch of 40,000 pounds upon the rivet head is effortless. Gently the jaw opens; gently and solemnly both batteries retreat. The frame moves on to another group of monsters, where the process is repeated with a second set of rivets. One hundred rivets require about 100 dragons, and only about six can operate comfortably at one "station."

Sometimes, if you please, the beast opens its mouth to bite, thinks better of it, retires, rears up into a more ferocious position, and then comes dreadfully down. It is reported that Mr. Otto Kahn could not be budged from his entranced survey of this deliberate animal. "I have seen many ingenious machines," he said, "but this is the first that ever I saw which started to do a job, stopped, spit on its hands, hitched up its overalls, and then went to work!" This is a good story—but dragons, my dear Mr. Kahn, really, dragons do not spit on their hands.

There are nine units in the total process. In each unit are a number of stations—connoting a single operation. What I have described is but the operation of several stations on unit No. 6, the general assembly line. As we walk along our platform which runs the length of the building, each unit is identified between its dividing aisles, and its general function, if not its bewildering detail, made plain. A little table tells the story:

Unit Function

No. 1.—Picks up the raw steel strips, examines them, throws out those which do not meet the required standards of length, breadth, and thickness.

No. 2.—Douses the admitted strips into baths of pickle for cleaning.

No. 3.—Fabricates the longer strips into right and left side bars—bending them, turning up their edges, punching holes for future rivets.

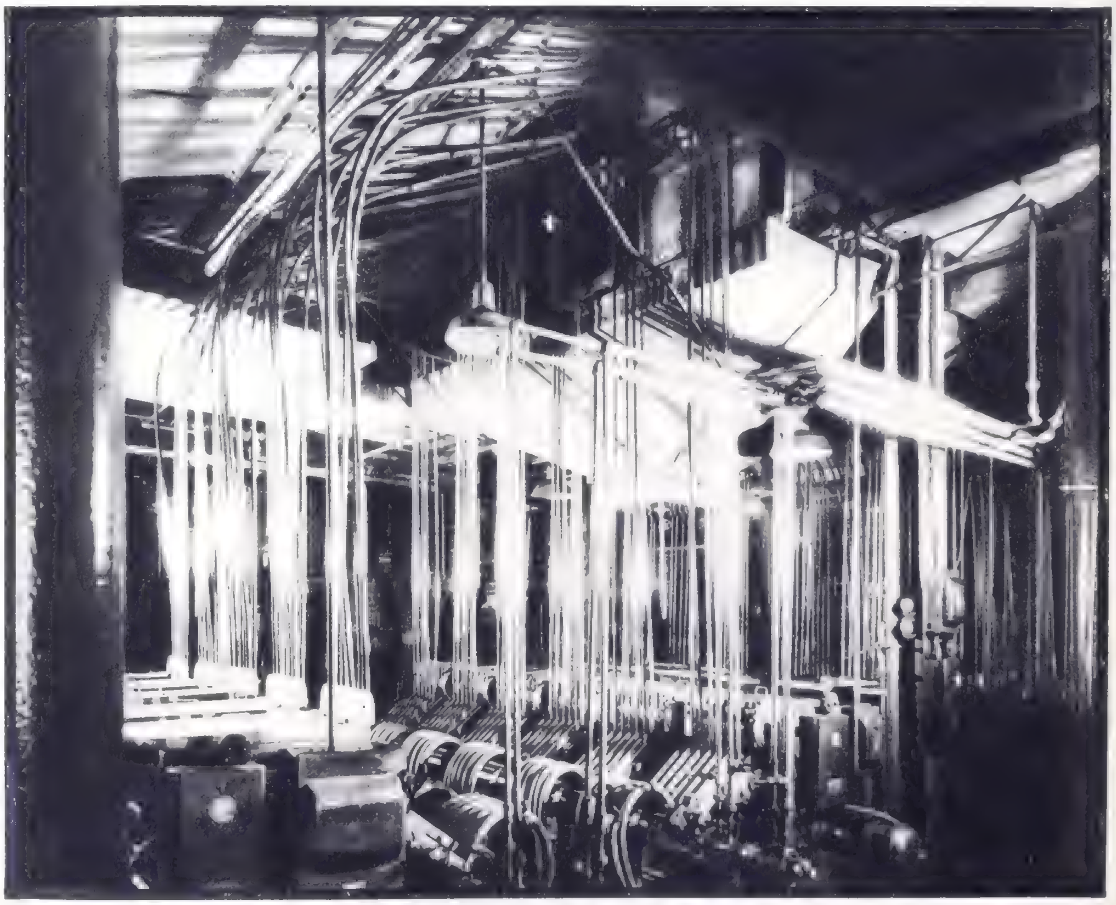
No. 4.—Fabricates the shorter strips into cross bars.

No. 5.—Assembles the various parts of the side bars.

No. 6.—Assembles the whole frame, inserts and drives home the rivets—by virtue of monsters altogether fabulous, as we have seen.

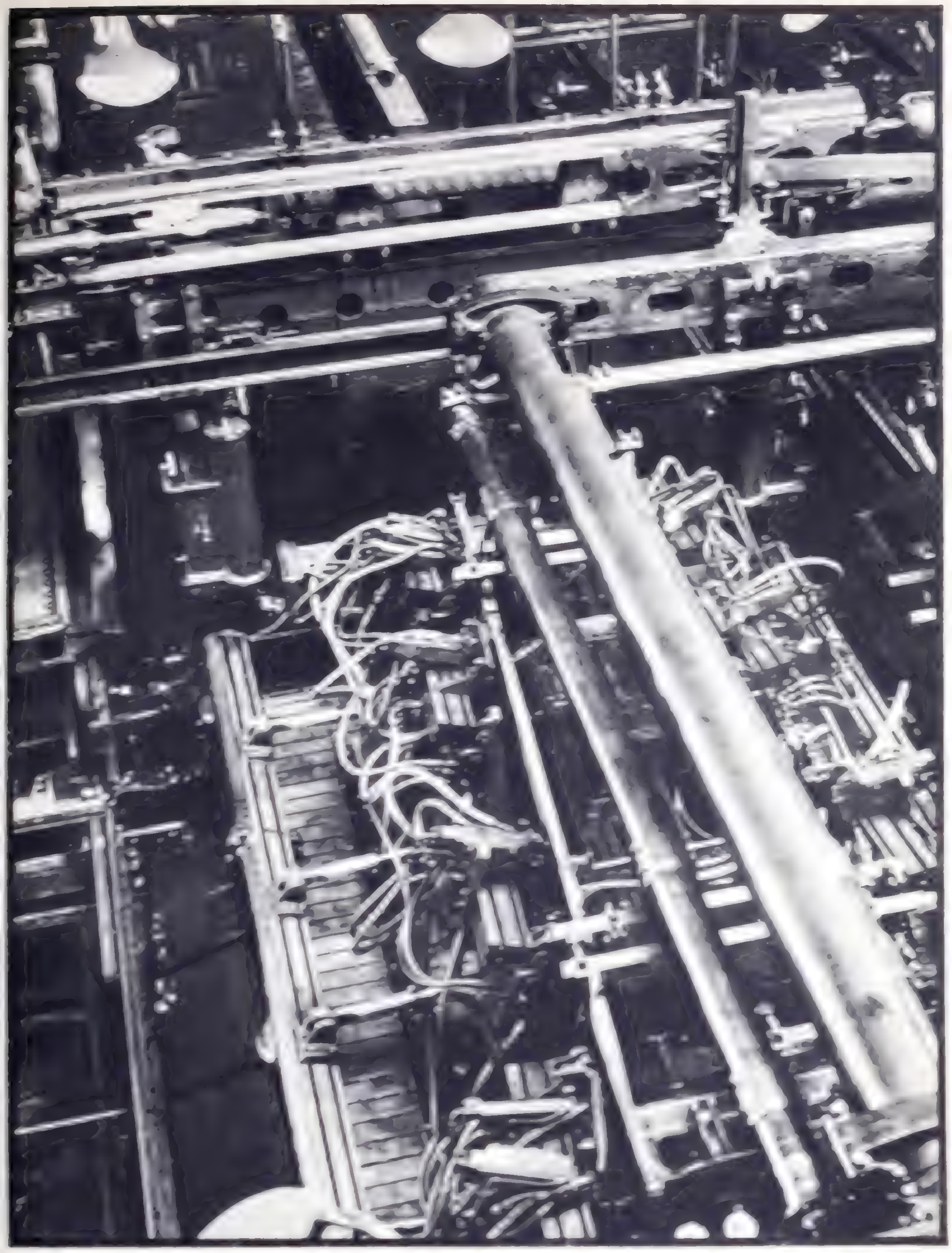
No. 7.—General inspection of the assembled frame, a partly human job.

No. 8.—Automatic washing, painting, and drying.



THROUGH THESE TUBES

. . . rivets are forced by air up to the great nailing machine on the assembly floor above. At the lower left are the starting boxes, and behind them the hoppers where the rivets are stored.



HERE AN AUTOMOBILE FRAME

. . . is being riveted together in one automatic operation. The rivets are forced by air from hoppers on the floor beneath to the riveting machine which rivets six hundred steel parts into the frame. To engineers this is the supreme mechanical achievement of the automatic mill. [illegible] of the automobile.

No. 9.—The handling of the finished, dried, completed frame by the left hind leg, as it were, and hanging it, like a hog in a packing house, in a vast overhead storage space. There it hangs, [illegible] until a man in a little travelling crane, which crawls like a busy beetle among these towering heights, drops it, [illegible], into a waiting freight car.

One hour and a half from raw steel to suspension by the hind leg, and a minute or two more to freight car if there is any rush. Every eight seconds a completed frame goes swinging into storage, 450 an hour, [illegible] a shift. Frames for Pontiac, Chrysler, Chevrolet, Buick. For each type of frame, the great dance stops for a few hours. Skilled mechanics swarm out from the tool shop at the end of the building and reset the dragons' jaws and the other instruments to take care of the new size. Given an overall length and width, any variety—[illegible]—of frame can be made. About thirty different styles are now fabricated, but the total variety is virtually limitless. The goal of standardization with flexibility has been won. In nine years of operation no automobile maker has ever had to shut down his assembly line for lack of frames, this in spite of [illegible] on the part of customers.

Answers to the Jeremiahs

Are the Jeremiahs answered? Academically no. Practically yes, if this sort of thing is to expand. Mr. Smith admits his mill to be an engineering failure though a huge commercial success. He set out to build a machine that would make frames without men. He did not quite succeed. At one or two stations, men touch the frame with their hands, thus breaking 100 per cent performance, though this is still the goal. The Jeremiahs, I among them, find other objections in the thought of ex-robots walking the streets. As technological unemployment advances, a technological solution must be found. I was glad to hear Mr. Smith say that shorter hours offered one remedy from the long swing point of view.

But consider the tangible achievement. Not a stone's throw away is the old "hand" mill. I went through it, and the contrast was staggering. Here are 2,000 men in long assembly lines, drilling holes, driving bolts, twisting shapes, conveying the growing frame by hand from process to process. Yet work as they may, they can make no more frames a day than can the automatic mill with a scant 200 men, not more than fifty of whom actually touch the product. Two thousand dreary jobs against 200 amusing ones, for an identical output! Ponder this well, ye Jeremiahs. The cost of the automatic frame to the hand frames is as two to three (and rather less in total than a good pair of shoes), with a very large absorption of development overhead. Some day when this overhead cost is all absorbed, the automatic cost will fall into the subcellar . . .

Few men ever voluntarily leave the automatic mill. There is a long waiting list. They appreciate it as "something different"; they appreciate the boldness of the boss in designing it, and their jobs are certainly far more independent and interesting than those in the hand mill. One man sits in a little tower, the control switches of a whole unit under his hand; another resets the gape of the dragons' jaws; another adjusts the "riveting machine," the automatic riveter which shoots by compressed air a hundred tiny bits of steel at once. To skilled technicians this is the supreme mechanical achievement of the mill and the engine of which Mr. Smith is himself the proudest. Skill varies; some jobs can be taught in a few days, others require months and months of intensive training, while in design, erection, and repair we have as skilled a group of crafts as this, or any other age, has ever glimpsed. The whole building is one vast integrated machine. Another major job remains, however, before the Jeremiahs are completely routed. There is, I believe, too much noise in that place for human ears to stand indefinitely without injury.

I asked Mr. Smith if the process were applicable to other industries. "Yes," he said, "almost everywhere when the demand is great enough to warrant 'million-lots.' Even automobiles could be assembled automatically if we were sure of their general

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style long enough to spend the time and money."

All the eggs of the A. O. Smith Corporation are not in one basket. Far from it. Frame-making is depressed at the present time due to the slump in motor cars (90 per cent of frame makers retain their jobs at shorter hours), but the pipe business is roaring as never before. Nor is the demand for pressure vessels in the doldrums, due to its close association with the developing chemical industry.

The chemical industry

This leads us back to the War. The company was conscripted to make aërial bombs. It devoted all its time to the art—dust even gathered on the frame mill blueprints in 1918. It made a lot of bombs, but far more important, it worked out an electric arc-welding process with which to seal up the bombs. This was later applied to couplings for joints in oil well pipe. The art of drilling was distinctly improved. Why not make bigger and thicker couplings, still by the welding process, put heads on them, and use them for stills in which to crack gasoline? Why not make all sorts of vessels capable of withstanding great pressures and high temperatures? The lowly casing coupling began to swell into the most fantastic shapes. One walks through the pressure vessel building as through some Mesozoic zoo. It is a custom department; each Megatherium is built to order. Here they are in all stages of construction: a round bellied monster sixty feet long, eight feet high, with a hide four inches thick; a vertical specimen twenty feet high, with a bloated stomach and amazing protuberances at cock-eyed angles; another with the tapering head of an anteater—except that it is thirty feet in circumference. About these monsters play skilled men in goggles and gloves, roweling their vitals with blinding flares. The fumes are borne away in boa-constrictor conductors which writhe about every job, and the air is clear. The steel bubbles, fluid as water when the arc comes down, and when it cools, the healed breach is as strong as any part of the vessel.

Perhaps you do not believe the latter statement. Indeed the local engineers were not absolutely sure of the strength of the early vessels themselves. There was nothing to do but to put them under pressure until they cracked, and find out where they cracked, and why. Great vessel after vessel was taken out in an open field and pumped full of water until—at 20,000 pounds or more to the square inch—it exploded, with instruments to measure and assess the yielding point.

This was unheard of. The Smith engineers not only found that when their welded vessels exploded the break was never at the point of welding, but they found out so many new things about "factors of safety" hitherto assumed by other vessel builders that they were forced to change the term to "factors of ignorance." They found that the behavior of steel at high temperatures under a long continued stress is far weaker than its behavior in a short test. They found out how openings and ends affected the strength of vessels. They made exhaustive studies of fatigue in steel. They made their pressure vessels impregnable (no one has ever failed) and at the same time added certain new and highly important laws to general science.

Mr. Smith's pipe dream

As a result of this research, the company is building the largest high pressure vessels ever known—one of them seventy feet long. Observe, too, that this process is yoked firmly to the almost unlimited future of the dawning chemical industry—ready to fabricate its stills, towers, digesters, and autoclaves, strengthened for unprecedented temperatures and pressures.

We go back to aërial bombs for the last major commercial product of the company. Lying in the Florida sun, a few winters ago, Mr. Smith had a pipe dream. Why not fold up long sheets of steel and arc-weld them where the edges joined? Why not give the pipe industry, which had scarcely moved for thirty years, a jolt? Within four months of his return, a new mill had been designed and built, and the pipe was coming through. Soon it was emerging to the tune of eight miles a day. Now it emerges at the rate

A SPECIAL OPERATION IS THIS WELDING OF A GIANT TANK IN ONE OF THE A. O. SMITH PLANTS IN MILWAUKEE of thirty-two miles a day. Presently . . .

It is a process noisy but simple to follow. Here come the big sheets of raw steel, sliding along on rollers. Three great bending machines force them into circles. The open seam is then welded by men in what look like gas masks, plying their flares high up in the middle of the shop—a Dantesque row of figures—while the pipe slowly moves beneath them. Each section is then subjected to terrific pressure to test its strength, with milky water to show possible pin hole leaks. The show then turns completely automatic and the thirty-foot pieces are washed, painted, dried, and rolled up a causeway into a storage bin even more fabulous than that designed for frames. It is a steel skeleton, 100 feet high, packed solidly with packages of pipe, one package to a carload. The cars roll under the great crane, and a package, specially designed to meet the shocks of traveling, drops neatly in.

The American oil industry—and its bankers—were shown how they could, with this particular kind of pipe, build transcontinental lines for gas and gasoline at a cost lower than had ever been thought possible. Sceptics were turned into believers when they saw this pipe standing up under the hands of great torturing machines which tested its strength by crushing, twisting, and accordion-pleating; when they saw it required 134 less joints to the mile than the old twenty-foot pipe required; when they saw gangs of specially trained Smith Corporation men sinking it into the ground at unbelievably low costs per mile. In brief, the engineers demonstrated to the oil men how to make money in their own business, and the great pipe line boom was on. Four thousand miles were ordered in May and June of this year alone. Gas is coming to Chicago from Texas, 1,250 miles away; gasoline is to be pumped over an 800-mile line.

Elimination of waste

What particularly pleases Mr. Smith and as a fanatic on economic waste particularly pleases me is that by virtue of these pipe lines, gas hitherto blown off into the atmosphere is to be collected and salvaged. It is more valuable than any manufactured gas known. Yet one well in California blew off enough gas, day after day, to meet the daily requirements of the entire city of San Francisco!

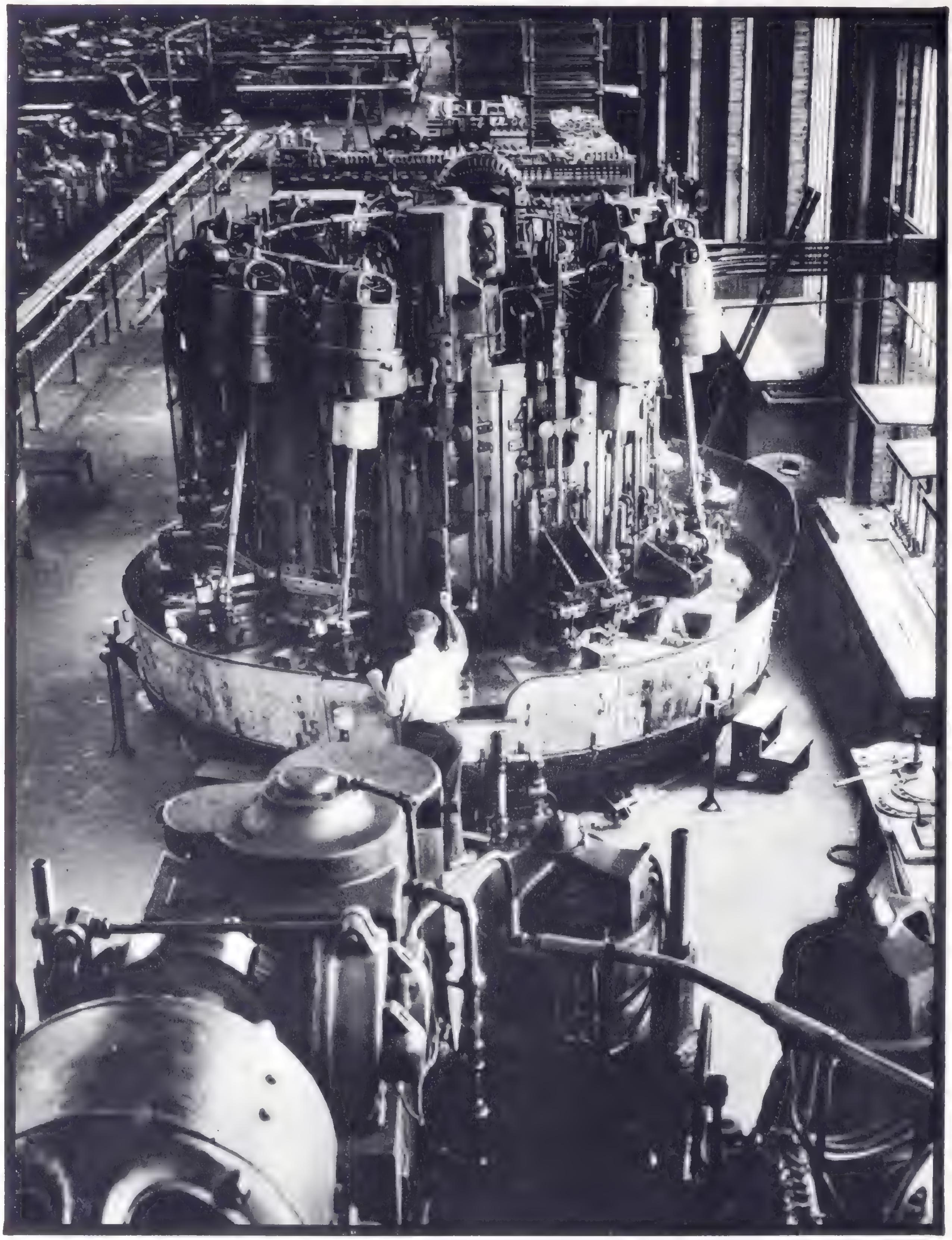
This is not the end of the story, only the beginning. Other pipe builders have been aroused from a generation of lethargy to de-

[*Continued on page 102*]

ELECTRIC ARC WELDING

. . . of large-diameter pipe was for a long while a virtual A. O. Smith monopoly, but is now being challenged. Here is seen the welding process. Above are the electrical supply lines which feed the arcs below. The arc melts a wire electrode which fills the unwelded seam in the pipe.

LINGAME



THE AUTOMATIC FUNCTION IN INDUSTRY

THIS SINGLE, COLOSSAL UNIT MACHINES ALL THE CASTINGS FOR AN AUTOMOBILE FRAME. ITS LONE ATTENDANT IS NO ROBOT, BUT HAS THE RESPONSIBLE, INTELLIGENT TASK OF WATCHFUL SURVEILLANCE

PIPE FOR GAS AND OIL

STORED IN EXACT CARLOAD LOTS, THIS FAMOUS PRODUCT OF A. O. SMITH IS ALWAYS READY FOR SHIPMENT

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The Seal and the U. S. Treasury

Are intimately concerned with a harem on the Pribilof Islands, and with a color called *bois de campêche* which Mrs. Hoover favors.

GERASSIM PRIBILOF yawned—then stopped all of a sudden. Why? Because he had just seen an island north of the Aleutians, and on that island were frolicking thousands of fur seals. Gerassim Pribilof had discovered what he and the Russian Government had sought for years—the breeding place of the huge Bering Sea herd of fur seals which now bears his name, a herd which, by the way, comprises 80 per cent of all the fur seals in the world.

In time, Gerassim Pribilof died. That did not matter very much. In time (actually in 1867), the Russian Government sold Alaska to the U. S. for $7,200,000. That did matter.

It mattered, if for no other reason, because during the next forty years the U. S. Government made, by leasing the privilege of killing seals, exactly $9,473,996, nearly one and one-half times the price of Alaska. Whatever Alaska made thereafter was clear profit for Washington. In 1910 the government stopped leasing and decided to do its own seal-killing. So that in 1929 the grand total of sealskins sold by the Department of Commerce for the government was $827,374.86. *All* of which did not go to the government, but much of which is today safely in the Treasury.

The Pribilof Islands

There are five Pribilof Islands, but only two are important: St. Paul (thirteen and one-half miles long, seven and two-thirds miles wide) and St. George (forty miles from St. Paul, twelve miles long, four and one-half miles wide). And the government guards them jealously. There is even a little bit of light artillery on them in case you should poach. The government each year hears about their population of 368. It rejoices to learn that there are fifty-seven school children on St. Paul and forty-seven on St. George. It is glad to be informed that the four who are enrolled at Chemawa, Oregon, in the Salem Indian School (Mariamna Merculieff, Kleopatra Krukoff, Tatiana Krukoff, and Abraham S. Merculieff) are "all well and doing nicely." It should not be concerned that in 1928 there were three new accounts opened by natives and four closed because the funds of natives on hand December 31, 1928 (in custody of the U. S. Commissioner of Fisheries as trustee), totaled the reassuring amount of $10,942.50.

The islands are in the Bering Sea, part of the Territory of Alaska, and 240 miles from Unalaska, the nearest port. They are volcanic in origin and until Pribilof discovered them in 1786 they were uninhabited by man. The climate in winter is cold but by no means unbearably so; in summer it is mild. But it is not the climate nor even the school children nor the roads nor the churches—no, nor even the light artillery—that is of most importance to the government. The important thing is, of course, the herd of seals.

Courtesy of U. S. Bureau of Fisheries

A BULL SEAL

In May and June bull seals take their place on rocks along the Alaskan shore and wait for their mates. Year after year they are apt to choose the same rock although not always the same mates.

The seal

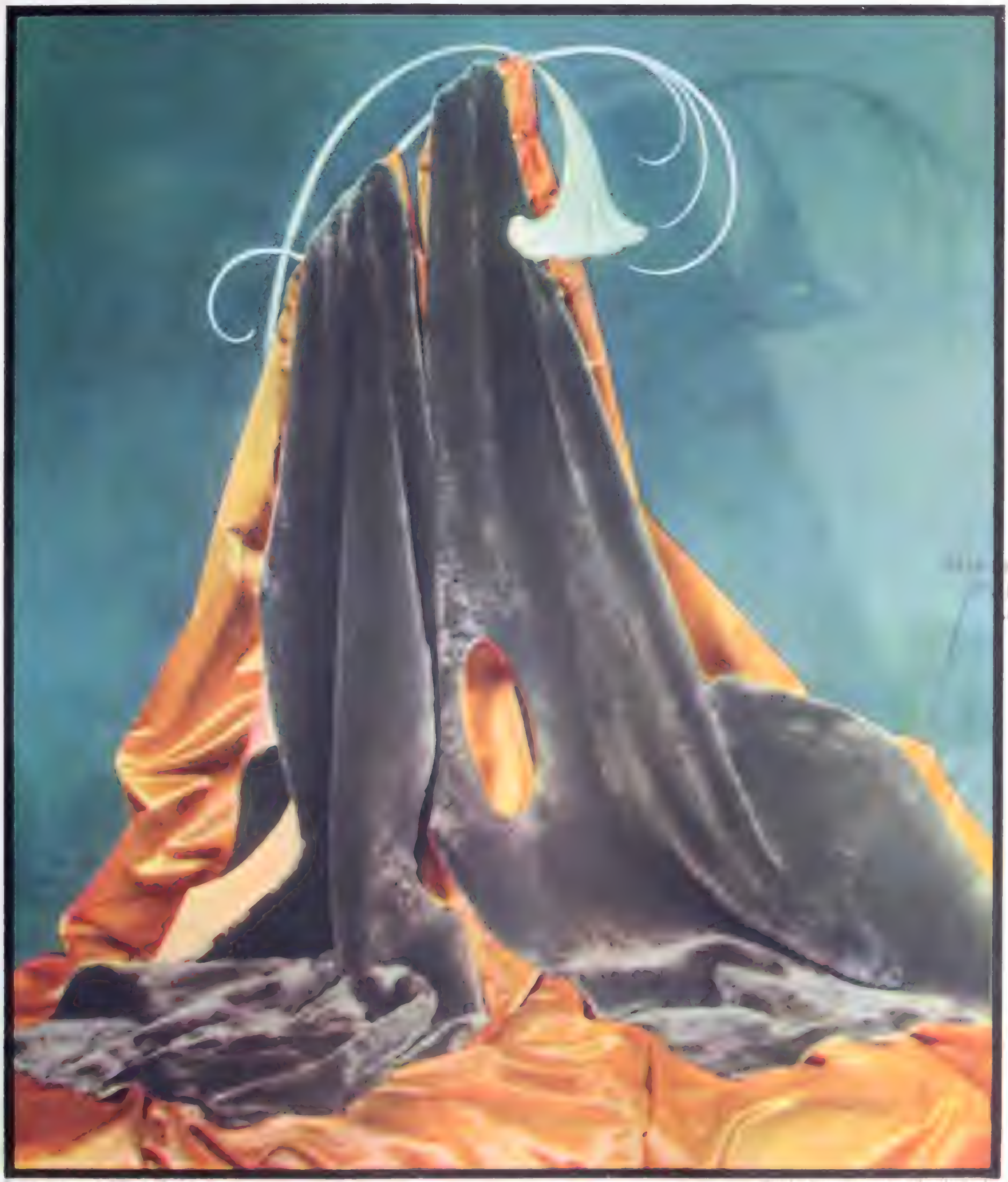
Before discussing the actual Pribilof herd and telling why last year there were 971,527 seals and this year there will be more than 1,000,000, before explaining why St. Louis, Missouri, and not London is the center of the seal-dyeing industry, or venturing why the future of the industry may well depend on the fur called *bois de campêche*, it were well to tell just what a seal is. For the seal is an interesting mammal.

There are, in the first place, two kinds of seals, the hair seal and the fur seal. With the first, which has only bristly hair and no nice soft undercoat of fur, we are not concerned here. That seal, anyhow, prefers the northeast coast.

The most interesting thing about a male fur seal, properly a "bull," is his lusty polygamy. Herewith a brief review of his almost ritualistic sex-life.

Come May and June and the bulls (they are sometimes five but generally they average six years and above) swim to one or another place which for reasons of their own they favor. It is said that year after year they return to the same place, which for many reasons becomes like home to them. Sometimes new bulls dispute their claims, and there are fights. On or about June 15, however, everybody is more or less happily settled. Then come the females, thousands of them, and each of them is pregnant. There are sometimes elaborate courtships, sometimes a brazen female picks her bull and swims right to him, almost always there are fights over the females. Each bull finally collects a harem ranging from two or three to sometimes sixty females, and shortly after, the pups are born (females have one and only one pup a year). Shortly after that, the females are impregnated again. During all this time the bulls nor eat nor drink and sleep only a few minutes at a time. They are very emaciated and tired when it is all over. During the last week of July the bulls relax their vigilance. It makes less difference to them now if the females swim away from their harems (before, any female who tried to do so would be grabbed by the nape of the neck and flipped over the bull's head to where she belonged).

At this time (we are now in July) the two-year-old virgins swim ashore for their first impregnation. The harems more or less dissolve; the atmosphere is more social and playful. Next year they will return, virgins no



Sealskins courtesy of Fouke Fur Company

Display [illegible] courtesy of [illegible]

BOIS DE CAMPECHE

THE LATEST COLOR IN SEALSKINS. MRS. HOOVER HAS A COAT MADE OF THESE SKINS AND AS A WEDDING PRESENT SHE SENT TEN TO PRINCESS MARIE-JOSÉ OF BELGIUM

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more, to have their pups and the cycle will be repeated.

There is something amusing about the entire rite. There is also something moving. One remembers a huge solitary bull seal silhouetted against the simplicity of sky and sea, staring silently at the long cold sea from which, he knows, will come his mate. Before him is immensity. Behind him a land not altogether friendly to him. But the seal waits with the knowledge and assurance that are given to animals, that are denied to man. The natives on the Pribilofs remember these scenes and talk about them. And so do the visitors.

The Pribilof herd

When Gerassim Pribilof discovered the herd, he was undoubtedly happy and he undoubtedly killed several and skinned them. There were probably 2,000,000 seals in all. It would have been difficult to have noticed that any had gone. Gerassim probably did not care whether he killed a bull or a female or a pup. And neither, it developed, did the seal hunters who followed him through the years. More and more common grew the custom of pelagic sealing, that is, killing the seals at sea when great herds of them were migrating to shore. In this way many a pregnant seal was killed, many a seal sank into the Alaskan waters before its body could be picked up. Inevitably the herd was decimated. Of the 2,000,000 which delighted Pribilof's eye in 1786, there were in 1911 only 123,600. The year 1911 is not chosen arbitrarily. For it was in 1911 that the North Pacific Sealing Convention went into effect, and for those who do not know it, it is well to state that this Convention made for what is probably the most successful and brilliant example of conservation ever undertaken by the U. S. Government. Briefly the Convention (it is an agreement between the U. S., Great Britain, Japan, and Russia) forbade pelagic sealing, left the killing of seals entirely in the hands of the U. S. Government. Because Japan and Great Britain had some rights to the herd (it is practically impossible for one nation to establish sole rights to a herd of traveling marine animals), the U. S. agreed to give them each 15 per cent of the seals killed each year (in actual practice the government has paid 15 per cent of the price fetched at auction). Because there are seals on the Russian-owned Commander Islands in the Bering Sea, Russia gets no percentage of the Pribilof herd.

The results of the Convention were that in one year, by 1912, the size of the herd had increased by nearly 100,000. In 1929 there were more than 900,000. And this year there will be more than 1,000,000. On a graph it makes an interesting curve. At an exposition in Leipzig, Germany, this summer the Department of Commerce had an exhibit showing some stuffed fur seals in a stage setting representing their natural environs. Prominently displayed is a chart of the progress of depletion and post-1911 replenishment. There is a miniature of it on the mantelpiece of the office of Dr. Julius Klein, Assistant Secretary of Commerce. He shows it to friends with glee.

It is in theory and virtually in practice only the three-year-old males that are killed. The reasons therefor are several. Since the seal is polygamous, it is obviously the males that can the better be spared. Three years is the best age, because at five or six the seal is mature and a potential father. Furthermore, the three-year-old bachelors never go to the harem ground but disport themselves close by on land known as the "hauling grounds." The killing is as humane as possible. The seals are driven inland; those selected to die are clubbed over the head (which stuns them) and their hearts are pierced. Those who are allowed to live, in slow ludicrous procession, march homewards toward the sea. The seals are skinned much as any animal is skinned. In 1929, 40,068 were taken.

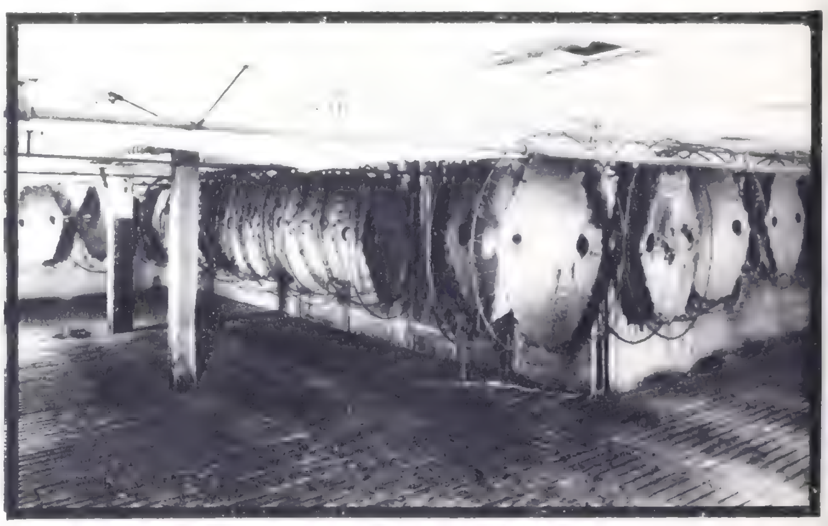
London to St. Louis

It is odd but true that all this thrashing, all these courtships and fights up around the 57th parallel should all be for the greater glory of St. Louis, which is around the 39th. But such is the case, although it was not always so. For killing and skinning the seal is not the end all and be all. The skin must be dyed. And the center of the seal dyeing industry is at the Fouke Fur Company, 1328 South Kingshighway, St. Louis, Missouri.

It was not, as we have said, always so. Before 1910 the centers of seal dyeing were in Paris, Leipzig, and London, but principally in London, where a certain Mr. Rice had control of a secret process of dyeing. The transference of this industry from London to St. Louis was rather complicated. The hero of the story is Colonel P. B. Fouke, president of the Fouke Fur Company, and other characters in it include Charles Nagel and William Redfield who, as you may remember, were sometimes Secretaries of Commerce. The tale does not repay too minute attention, but none the less deserves mention. Colonel Fouke was aware of an economic fallacy in shipping the undyed sealskins to London, then importing them back into the U. S. as dyed fur and paying tariff duties thereon. For the U. S. then, as now, was the greatest market for the skins. Since the seals in the first place were mostly the property of the U. S. Government and since the U. S. was the leading market for the dyed skins, why not, argued Colonel Fouke, establish the seal dyeing industry in the U. S., why not, he pursued, establish it in St. Louis where Colonel Fouke already had a fur-dyeing business and where he was perfectly willing to dye seals? To this logical plaint Secretary of Commerce and Labor Nagel (and later Secretary of Commerce Redfield) lent attentive and sympathetic ear. Accordingly Colonel Fouke journeyed to London to convince Mr. Rice that he should establish a branch plant in the U. S. But Mr. Rice cared not at all for the idea. There were several years of inconclusive and dreary negotiations, and finally two of Mr. Rice's dyeing experts, Mr. Gibbins and Mr. Lohn, decided that they would go to St. Louis and launch the industry. There were further complications, not the least of them being the War. Mr. Lohn was unable to leave England; Mr. Gibbins sailed with Mr. Lohn's son. In the meantime Mr. Rice was threatening suit. After the War the suit was finally heard. But by that time the Fouke

[*Continued on page 122*]

A HAREM OF SEALS ON THE SHORE OF THE PRIBILOF ISLANDS



SEALSKINS DRYING IN THE FOUKE FUR COMPANY OF ST. LOUIS

Scenario of Two Young Men

Gordon Sohn and Frederick Brant Rentschler, banker and mechanic, forty-our and forty-two, brothers, sons of George Adam "Boss" Rentschler—brilliant expo-ents of their age.

I.—Gordon Sohn Rentschler became president of e National City Bank of New York on April 2, 29. A few weeks later, it was declared to the largest bank in the U. S. Its assets were over ,800,000,000, and its deposits exceeded $1,300,-0,000. Subsequently, and by mergers, the Chase ational Bank passed it in both assets and de-sits. But it remains one of the great banks of the orld. Its assets on June 30, 1930, had passed ,078,000,000, and its deposits had increased by 00,000,000 to $1,560,000,000. It has forty-five anches in greater New York; and its investment filiate, the National City Company, has over ty branch offices in the U. S. The National City ank itself has ninety-nine branches in twenty-four reign countries, including Argentina, Brazil, ile, Colombia, Cuba, Dominican Republic, exico, Peru, the Philippines, Porto Rico, Panama, ruguay, Venezuela, Belgium, China, England, ance, Japan, Manchuria, and the Straits Settle-nts.

II.—In April, 1930, United Aircraft and ransport Corporation, organized (and headed) by ederick Brant Rentschler in January, 1929, to m the Pratt & Whitney Aircraft Company of artford (largest airplane engine company in dol- volume: Wasps and Hornets), Boeing Air ransport Company (largest U. S. air transport mpany), Pacific Air Transport Company, and irteen other companies acquired control of ational Air Transport, Inc., ousting the Curtiss-eys group. The purchase added to the United stem thirty-five cargo transport planes, 2,272 iles of airways, thirty-six pilots, and an impor-nt group of air mail contracts, and made United most important corporation in the American air. ederick Brant Rentschler as president of United ircraft and of N.A.T. stands, therefore, for the me being, at the head of the industry.

III.—The combined ages of Gordon Sohn and ederick Brant is eighty-six. A combination their respective positions and authorities would ake that eighty-six-year-old airman-banker one the most powerful figures in contemporary merica. No brothers in American industry can oint to a more glittering record.

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The life of the Industrialist is composed ackward. You cannot start, as Tristram handy starts, at the beginning or before it. o one can tell at the beginning whether the fant will be an Industrialist or not. It may row up to write plays or to sleep in parks. he only safe procedure is to start laconically with the evidences of achievement and then spell out in reverse their explanation.

Consequently, Scene I of *Gordon Sohn Rentschler* is shot, not in the cradle, but in the executive offices of Hooven, Owens, Rentschler Co., manufacturers of stationary engines, in Hamilton, Ohio. The set is characteristic of such offices—a desk, a few chairs, pictures of engine sections, pictures of the Founder, class pictures, last year's umbrella in a blue pottery umbrella jar, etc. Mr. Rentschler, tall (six feet one or two), youngish (about forty), heavy-set, sits at the desk reading blue, typewritten sheets through a *pince-nez*. His haberdashery suggests a New York shop and his air is that of a gentleman of metropolitan importance, a banker, say (obviously a banker), familiarizing himself with the affairs of the home plant. There is a knock at the door. The door opens. A large, apparently heavy, evidently ancient Gladstone bag enters the room followed and supported by an exotic figure in a white linen suit. There is a brief exchange of the formalities of recognition. The bag and the linen suit approach the desk. The bag is heaved up, hoisted over, and removed, leaving behind it on the executive blotter a pile of cash, coins, bills, drafts, acceptances, money orders, and postage stamps, totaling, it is quite apparent, a large sum. And the mustachios enunciate: "Take these, senor. Take what I owe you, and the rest you will please invest for me." The scene blacks out.

It is followed at once by Scene I of *Frederick Brant Rentschler*. The set again is the executive office of a manufacturing plant, but the pictures on the walls are now of aeroplanes and aeroplane motors and the plant is that of the Pratt & Whitney Company in Hartford. The figure at the desk bears a curious, almost negative, resemblance to the recipient of the Gladstone bag. He is younger, slightly less tall, considerably less heavy, definitely handsome. It is apparent that an interview is going forward. The reporters are all attention. The figure at the desk has come to a full stop. He folds his arms. He lowers his eyes. And in a mild, almost embarrassed voice, which has no relation to the words it utters, says: "The air between the coasts is not big enough to be divided!" He gazes, as though with astonishment, at the reporters. The scene blacks out.

So much for laconic statement. The camera now proceeds in a businesslike and frank manner to explain everything. The scenes follow each other abruptly and concisely.

There is a glimpse of George Adam "Boss" Rentschler, who came from Germany, aged two, being sworn by, by his workmen in the Ohio iron-working costume of the seventies.

There is a glance of Phoebe Rentschler, college-bred daughter of Peter (also "Boss") Schwab, in the hourglass moulding of the eighties.

There is a shot of a farm in the rolling Ohio country (a farm for living rather than a farm for farming) with four 1890 children, all of them big, all of them healthy, all of them energetic, three of them male, one of them in glasses, extremely active about something under a stone.

There is a momentary idyll of the little white schoolhouse;

a shot of the Hamilton High School, with two long boys, one in glasses, the other in the tennis costume of 1902, in the foreground;

a sequence of Princeton views featuring green eyeshades, student lamps, more tennis, the Yale-Princeton game of 1906 as seen from the old wooden stands, average marks, average beer, undergraduate regularity;

a number of feet of film representing Gordon Sohn in moulder's shoes and overalls chucking pig iron in the Hamilton Shops, kidding with the Polacks;

a number of feet of film representing Frederick Brant in an automobile factory, doing delicate things to a 1910 model crankshaft, kidding with no one;

a fine romantic bit in the office of Mr. Charles E. Mitchell, president of the National City Bank of New York, in which the unknown Gordon Sohn persuades the unwilling financier to market $35,000,000 of bonds financing flood prevention in the Miami (Ohio) River valley;

a noteworthy close-up of Mr. Charles E. Mitchell eyeing the departing back of Gordon Sohn with a significant and prophetic eye;

a view of Lieutenant Frederick Rentschler, U.S.O.R.C., in uniform, looking intelligently at an aeroplane motor in a New Brunswick, New Jersey, plant;

a Cuban interlude in which Mr. Gordon Rentschler, in a white duck suit and a sun helmet, talks firmly but kindly to sugar planters, whose sugar recently worth thirty cents a pound is now worth four, about paying Hooven, Owens, Rentschler Co. for their previously acquired sugar manufacturing

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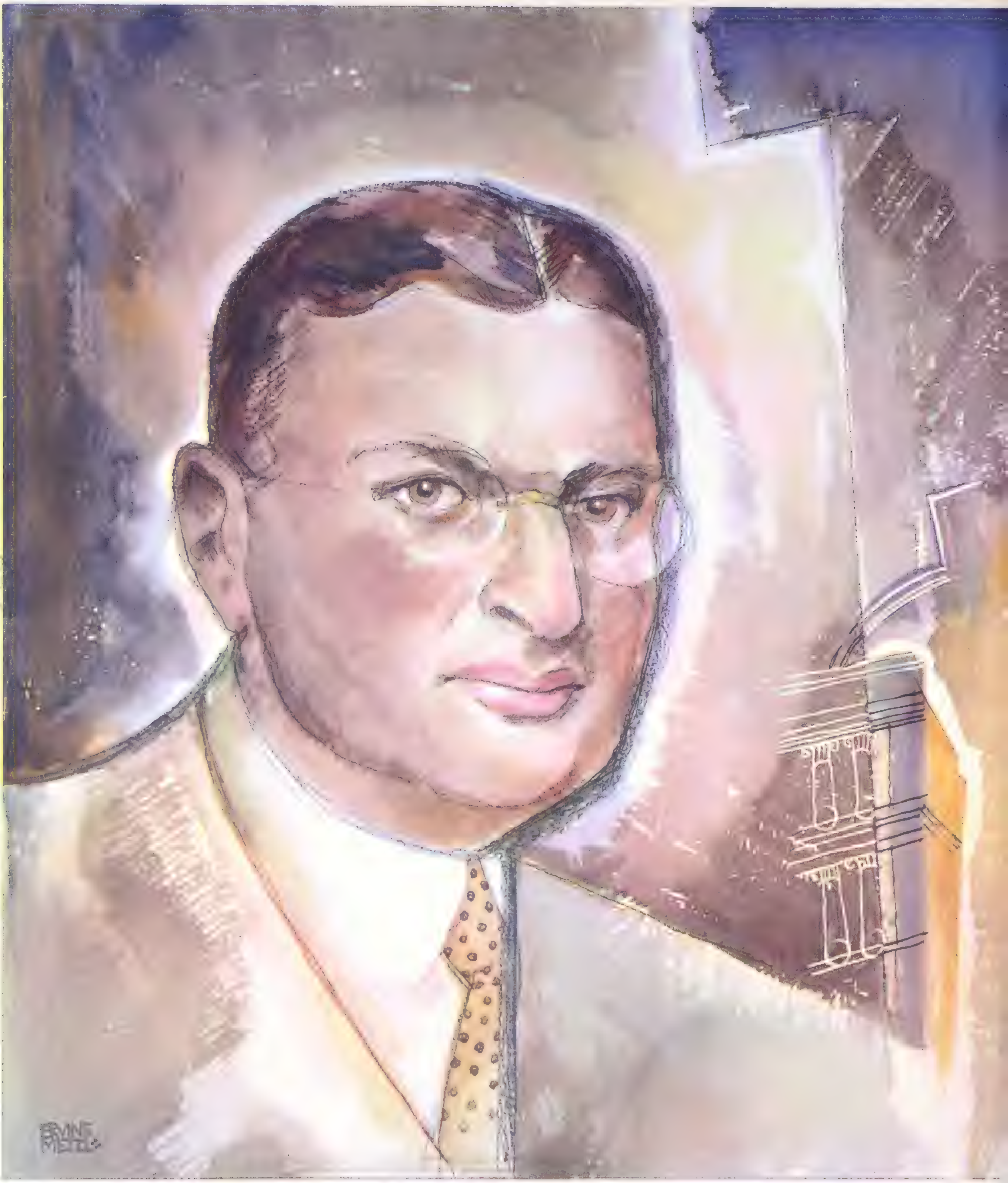
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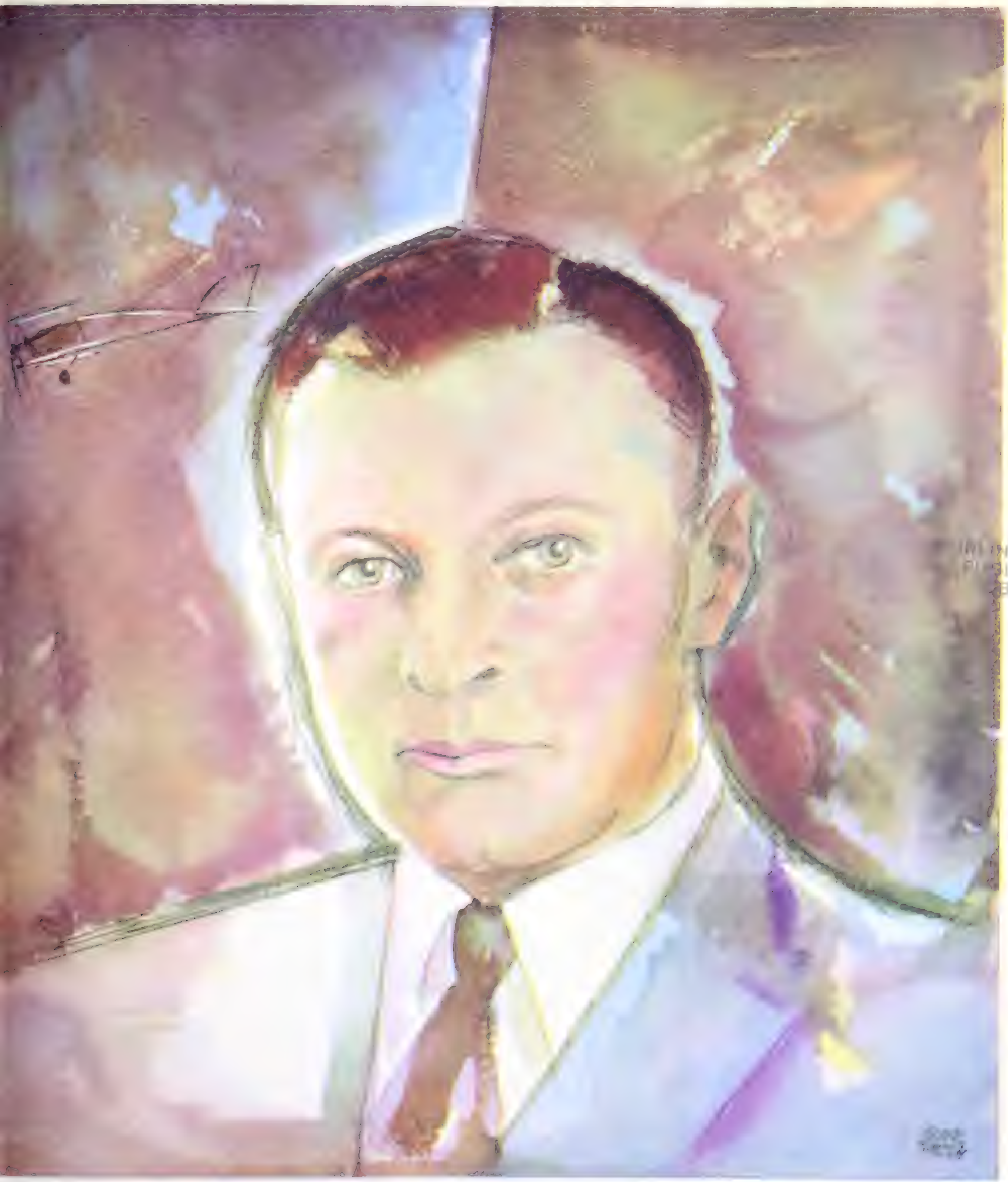
PORTRAIT OF GORDON SOHN RENTSCHLER—*BY ERVINE METZL*



PORTRAIT OF FREDERICK BRANT RENTSCHLER—*BY ERVINE METZL* machinery; argues with *centrale* foremen about the inefficiency of their methods; rides up and down the island inspecting plantations; reads a cablegram from Mr. Charles E. Mitchell of the National City Bank; talks firmly but kindly to sugar planters (whose sugar is still worth four cents a pound) about paying Mr. Mitchell's National City Bank for advances of credit (made when it was thirty); argues some more; rides again; rides; argues; imports second-hand railroad equipment; builds railroads (more track than was built in 1923-24 in the whole U. S.); plans model workmen's cottages; installs sanitary systems; sails in a blaze of glory with a delegation of sugar planters on the dock waving the sombreros of their resurrected confidence and a battery of newspaper cameras in the rigging;

a Hartford passage in which Captain Frederick Rentschler, organizer and president of the Pratt & Whitney Aircraft Company, watches in a mechanic's coat the bench tests of the first Wasp motor; rides out Asylum Street in his second Rolls and his double-breasted slick blue suit; paces off the dimensions of a swimming pool on his Talcott Mountain purchase; changes his business letterhead from Pratt & Whitney to United Aircraft & Transport, with Pratt & Whitney, Boeing Airplane Company, Pacific Air Transport Company, Chance Vought Corporation visible beneath the name;

a migratory passage in which Mr. Frederick Rentschler, organizer and president of United Aircraft & Transport, kisses his two daughters on a Tuesday morning at Brainard Field in Hartford; follows his pilot (Berny Whelan) and his wife into the cabin of his Wasp-powered Sikorsky; takes off; passes Berlin Junction; Meriden; New Haven; Bridgeport; crosses the Sound; lands at Roosevelt Field; drives to the Savoy-Plaza; drives from the Savoy-Plaza to the United offices at 230 Park Avenue; discusses the purchase by United of National Air Transport, its resources, its machines, its transcontinental air routes, its pilots; lunches at the Cloud Club on the sixty-sixth floor of the Chrysler Building with the hazy glitter of water at the Battery visible beyond the downtown towers; walks back to 230 Park Avenue; says that the air between the coasts is not big enough to be divided by United and N.A.T.; relishes the phrase; at six gets home;

a telephonic passage in which Mr. Frederick Rentschler in Hartford hears from an invisible person in, presumably, New York, that control of N.A.T. has been acquired.

A series of views in the National City Bank as follows:

Mr. Gordon Rentschler's induction as director of the National City Bank;

Mr. Gordon Rentschler's induction as vice president of the National City Bank;

Mr. Gordon Rentschler being advanced over the heads of innumerable vice presidents of the National City Bank;

Mr. Rentschler keeping up with the president of the National City Bank ("He [Mr. Rentschler] was the only man who could keep up with him [Mr. Mitchell] all day.");

Mr. Gordon Rentschler back home in Hamilton marketing in his shirt-sleeves; shaking hands with the citizens; recognizing the grocery clerks;

Mr. Gordon Rentschler teaching Mr. Joe Cahill, the Hamilton traffic cop, how to direct traffic;

Mr. Gordon Rentschler repurchasing the old farm, sold at his father's death;

View of Mr. Gordon Rentschler's Locust Valley, Long Island, home;

View of Mr. Gordon Rentschler's set of seven straight razors, one for every day of the week;

Mr. Gordon Rentschler making an avocation of reunioning with the class of 1907 ("For avocation I have rather made class reunions my specialty");

View of $7,000 worth of jewelry and $400 in bills vanishing from Mr. Gordon Rentschler's Locust Valley home between Saturday night and Sunday morning;

Mr. Gordon Rentschler inducted as president of the National City Bank; Mr. Gordon Rentschler's photograph (with Mr. Frederick Rentschler's face) published in the New York papers; Mr. Gordon Rentschler's opinions about banking, about Cuba, about getting ahead, about engines, about human beings, about life on the farm, reported in the press; Mr. Gordon Rentschler himself at his office in the National City Bank, quietly and efficiently steering a $2,000,000,000 corporation, keeping his men (from 125th Street to Straits Settlements) useful and busy, keeping his directors happy, keeping his accounts satisfied.

(From which point in the plot the obscure conduct of the Cuban gentleman with the Gladstone bag becomes at least comprehensible.)

There remain merely the close-ups required by tradition. Of the two, Gordon's falls more easily into focus. It is, first of all, his size. Not only that upon such shoulders burdens rest, serenely, but—even more to the point—there is evident an almost limitless resistance to nervous strain. Revolutions frequently throughout South America, special cablegrams daily, hundreds of millions on deposit, tens of millions "trusteed," dozens and dozens and dozens of junior executives, thousands of customers—for all this is required a shock absorber as perfect as possible. With energy to spare, Gordon Rentschler talks volubly and convincingly. He wears habitually the slightly doubtful expression of the man whose instinct is to think it out. He is at least as much at ease with the Hamilton mechanics as with his Locust Valley neighbors. And his Hamilton mechanics love him. He is an excellent college class president and college trustee. And he would have made a first-rate practical politician.

Fred is a different matter. Whereas the business man of Gordon's type if not of Gordon's energy has frequently appeared, Fred is peculiarly the product of his own age. Fred is the mechanic as executive. He has the interests, the patience, the sense of precision and of detail, the unworldliness, of the expert mechanic. He has none of Gordon's easy friendliness and eloquent speech. He is shy and reserved with people and only unguarded with machines. His Wasp and Hornet engines are as much a measure of his mind as of the excellence of his engineers. He would rather make motors than money. And the whole thing is written in his appearance. He has the athlete's body of the artisan, and the artisan's humorous, intelligent, shy, alert face. He looks and moves and acts like a man familiar with machines and accustomed to the life the machines impose upon the men who serve them. He is of the type the world is now beginning to recognize as American.

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Clustered about these two young men, on the directorates of their two great enterprises, are some of the most powerful figures in modern industrial America. The roster reads:

THE NATIONAL CITY BANK OF NEW YORK

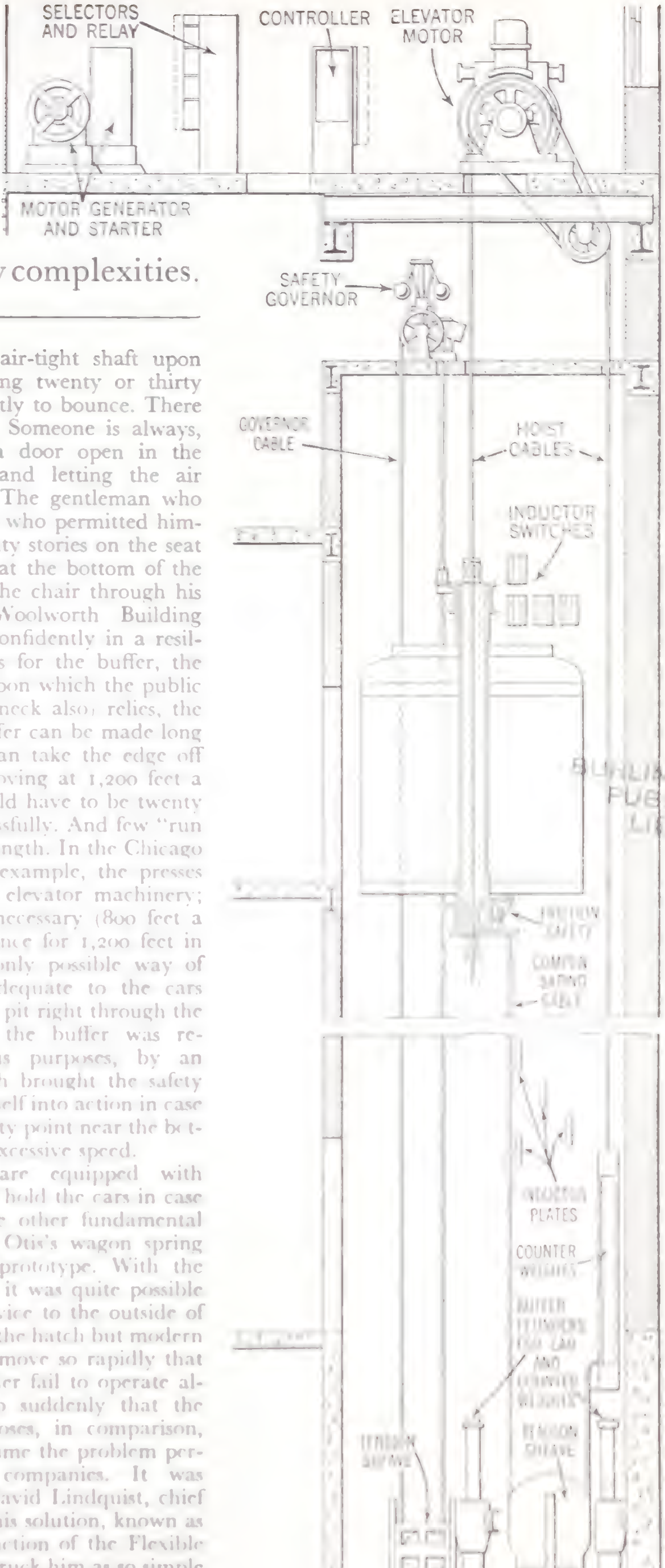
Hugh B. Baker	*Pres., National City Company*
Sosthenes Behn	*Chairman, I. T. & T.*
Floyd L. Carlisle	*Chairman, Niagara Hudson Power Corp.*
Guy Cary	*of Shearman & Sterling, lawyers*
Edward A. Deeds	*United Aircraft & Transport Co.*
Cleveland E. Dodge	*Vice president, Phelps, Dodge Corp.*
Fred J. Fisher	*Vice president, General Motors Corp.*
Philip A. S. Franklin	*Pres., I. M. M.*
John A. Garver	*of Shearman & Sterling, lawyers*
Joseph P. Grace	*Chairman, W. R. Grace and Co.*
Gerrish H. Milliken	*Pres., Deering, Milliken and Co.*
Charles E. Mitchell	*Chairman*
Charles A. Peabody	*City Bank Farmers Trust Co.*
James H. Perkins	*Pres., City Bank Farmers Trust Co.*
James H. Post	*Pres., National Sugar Refining Co. of New Jersey*
Percy R. Pyne	*City Bank Farmers Trust Co.*
Gordon S. Rentschler	*President*
Percy A. Rockefeller	*Anaconda Copper Mining Co.*
John D. Ryan	*Chairman, Anaconda Copper Mining Co.*
William A. Simonson	*Senior vice president*
Samuel Sloan	*City Bank Farmers Trust*
Robert W. Stewart	*Director, Continental & Commercial National Bank of Chicago*
James A. Stillman	*Newport Trust Co.*
Eric P. Swenson	*S. M. Swenson and Sons*
Gerard Swope	*Pres., General Electric Co.*
Beekman Winthrop	*Robert Winthrop and Co.*

UNITED AIRCRAFT & TRANSPORT

William E. Boeing	*Chairman (founder of the Boeing System)*
Philip G. Johnson	*Vice president (pres., Boeing Air Transport Co.)*
Charles W. Deeds	*Secretary-treasurer, Pratt & Whitney Aircraft Co.*
George J. Mead	*Vice president, Pratt & Whitney Aircraft Co.*
Frederick B. Rentschler	*President*
Edward A. Deeds	*National City Co.*
Gordon S. Rentschler	*Pres., National City Bank*
Joseph P. Ripley	*Vice president, National City Co.*
Joseph F. McCarthy	*Controller*
F. W. Jackson	*of Shearman & Sterling, lawyers*
Arnold C. Dickinson	*Chairman, Sikorsky Aviation Corp.*
Edward O. McDonnell	*Chairman, Aeronautical Industries, Inc.*
Thomas F. Hamilton	*Chairman, Hamilton Standard Propeller Corp.*
Charles F. Kettering	*General Director, Research Laboratories, General Motors Corp.*
Kenneth R. Kingsbury	*Pres., Standard Oil of California*
Charles K. Knickerbocker	*Griffin Wheel Co.*
Earle H. Reynolds	*Pres., People's Trust & Savings Bank*
William B. Mayo	*Chief engineer, Ford Motor Co.*
J. H. Hillman Jr.	*Formerly president of Standard Steel Propeller Co., now merged with Hamilton Standard Propeller Corp.*
Guerney E. Newlin	*Director, Newlin & Ashburn*

Skyscrapers:
ife on the Vertical

Is safe, is becoming very swift.
ow Otis, Westinghouse, *et al* deal with its many complexities.



CROSS SECTION OF ELEVATOR INSTALLATION

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F skyscrapers were bred like cattle (out of Structural Steel by the Express levator) there would be no confusion about heir pedigrees. One look at the herd book vould show that the open hearth and the olling mill are only half an explanation and hat without the elevator to serve it the frame f steel would be about as productive as the ast of the saber-toothed tigresses. It would till look very tall and magnificent—taller by a ood hour's walk than it looks in actual life. But he top floor offices would be inhabited by sea ulls and flag-pole sitters. The top floor rentolls would be expressed in red figures. And o one would ever build another on this earth.

The passenger elevator is the great exmple of the Yankee gadget that made its ay in the world. It was approximately ighty years ago at the Crystal Palace xposition on the site of the New York ublic Library that Elisha Graves Otis had is wagon spring contraption, with himself n frock coat and whiskers on the top of it, eaved laboriously fifteen feet in the air while e explained to the crowd the complete security f his position. And it was only a minute or wo later that he ordered the rope cut, that the ope was cut, that the wagon spring spread, hat the contraption stuck, that Mr. Otis removed his tall New Hampshire hat and bowed o the approbation of his fellow countrymen.

afety devices

Today the safety device is becoming the east interesting part of an elevator. Although he elevator manufacturers maintain a laboratory which still endeavors to increase and erfect the various brakes and clamps in se on elevators, no one need think much bout them. There has not been a fatal ccident due to the failure of elevator machinery since the development of the nodern electric traction elevator in 1905, nd the hundreds of thousands of people who are daily rolled to the lower end of Manhattan Island in horizontal tubes and lmost immediately jerked vertically into he air a distance of 100 or 300 or 800 feet o through the whole performance with no nore awe or admiration than they would xpend on a trip through their own clothes losets. The safety devices, of course, exist. here are automatic cut-offs, clamps, brakes, uffers—even the old air cushions upon which the elevator-traveling public most elies. The air cushion is the column of air at the bottom of an air-tight shaft upon which the car, dropping twenty or thirty stories, is supposed lightly to bounce. There are difficulties with it. Someone is always, for instance, leaving a door open in the bottom of the shaft and letting the air cushion unravel itself. The gentleman who conceived the idea and who permitted himself to be dropped twenty stories on the seat of a chair brought up at the bottom of the shaft with the seat of the chair through his shoulders. But the Woolworth Building elevators still bounce confidently in a resilient column of air. As for the buffer, the piston-like apparatus upon which the public mind (and the public neck also) relies, the difficulty is that no buffer can be made long enough to do more than take the edge off the fall. With a car moving at 1,200 feet a minute, the piston would have to be twenty feet long to work successfully. And few "run bys" permit any such length. In the Chicago Tribune Building, for example, the presses were built around the elevator machinery; high speed cars were necessary (800 feet a minute with an allowance for 1,200 feet in the future); and the only possible way of constructing buffers adequate to the cars was to dig a fifteen-foot pit right through the presses. Consequently the buffer was replaced, for all serious purposes, by an automatic device which brought the safety appliances on the car itself into action in case the car ran past the safety point near the bottom of the shaft at an excessive speed.

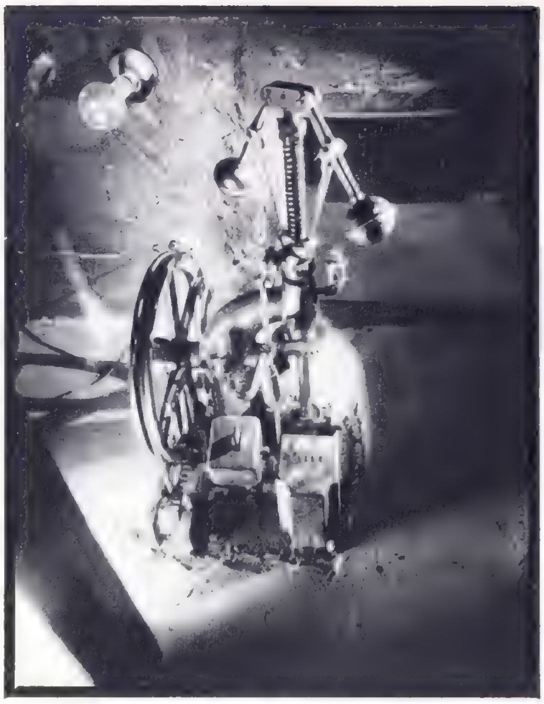
For all elevators are equipped with mechanisms which will hold the cars in case a rope breaks or some other fundamental part goes wrong. Mr. Otis's wagon spring and ratchet was the prototype. With the old-fashioned light rig, it was quite possible to apply some such device to the outside of the car or to the side of the hatch but modern cars are so heavy and move so rapidly that brakes of this kind either fail to operate altogether or operate so suddenly that the drop to the bottom loses, in comparison, its terrors. For a long time the problem perplexed the elevator companies. It was eventually solved by David Lindquist, chief engineer at Otis. And his solution, known as the Monomass Construction of the Flexible Guide Clamp Safety, struck him as so simple and obvious a mechanism that he was merely astonished at his failure to have thought of it before. It consists of blocks sliding between wedges. And the only simple thing about it is the fact that it applies resistance not only between the car and its guide rails but to the sheave and other parts of the traction system and that this use of several braking points (by some principle of physics too complicated for any but a physicist to understand) is more efficacious than the use of one such point. Other elevator men, however, shared Lindquist's opinion and were as much irritated by the simplicity as they were relieved by the solution. There was so much jealousy that Mr. Bassett Jones, as an independent engineer in no way connected with any of the companies, was called in to sponsor the device. It is now used in all skyscrapers of great size.

Accelerating the burghers

The real elevator problem is speed. It is, by now, axiomatic that elevators appropriate rentable floor space and that economic design consists in the best elevator service at the least sacrifice of footage. In other words, more elevator trips in fewer elevator hatches. Which means, of course, speed. The maximum speed of which present-day elevator mechanisms are capable is unknown, but is certainly very high. But the maximum speed allowed by law in New York City is only 700 feet per minute (with a strong probability, however, that it will shortly be increased to 1,200 feet per minute). Therefore elevator engineers have been compelled to solve their speed problem in terms of the elimination of delay.

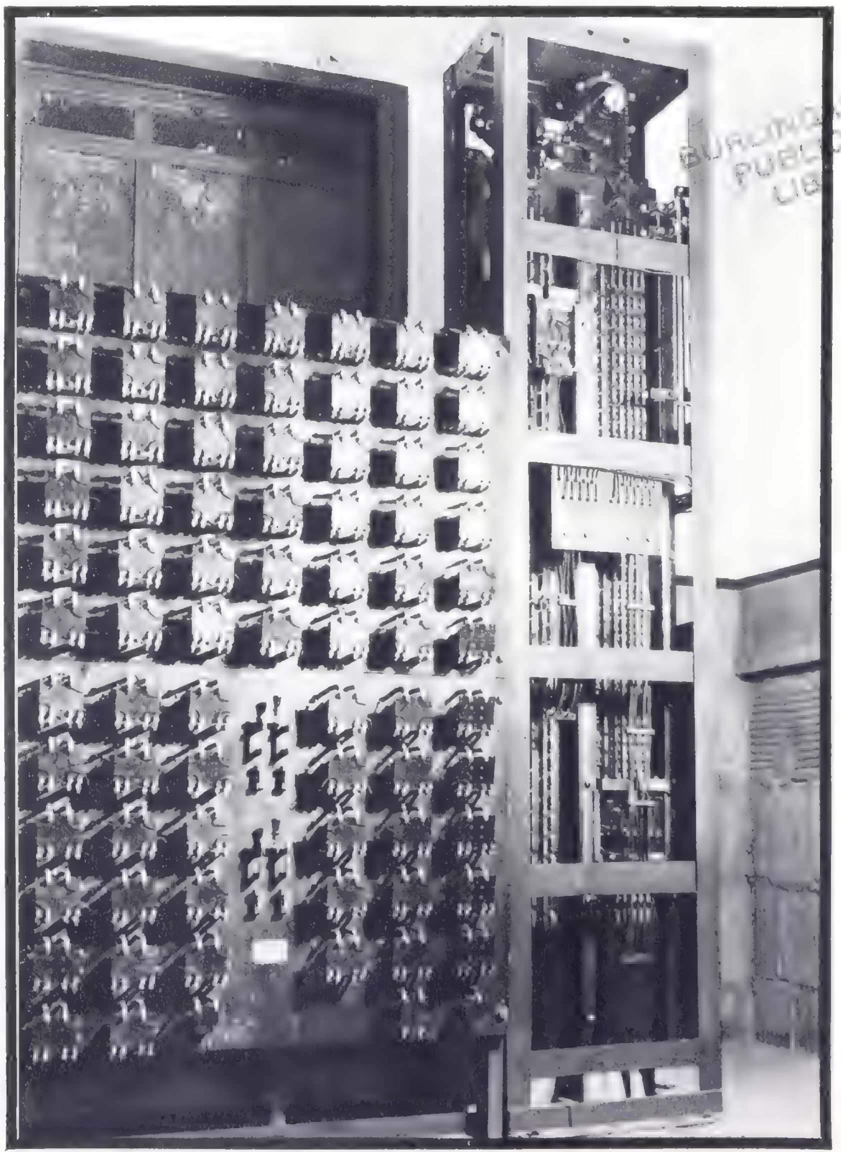
There are, in general, two ways of decreasing the time required for stops. One is to accelerate and decelerate your car more rapidly. And the other is to bring it to a stop at the level of the floor in question without lost motion.

A car can be accelerated very rapidly, and, so far as the mechanism of the car is concerned, you can decelerate almost as abruptly as you care to. With Lindquist's block and wedge system, a car in Yonkers running at 825 feet per minute was stopped within three feet. And you could theoretically build a car to accelerate at thirty-two feet per second per second. But passenger elevators carry human beings. And if you try to accelerate human beings too rapidly or to decelerate them too rapidly you run the risk of permanently altering their contours. As long as the car stands still their weight remains constant. And as long as they are raised from the earth at a fixed speed their weight remains constant. But the moment you start accelerating them upward their weight increases. If you accelerate them abruptly at a rate which increases their velocity by 32.2 feet per second for every second of travel (32.2 feet per second per second), they will weigh twice their usual weight as long as the acceleration remains constant. If you increase it by five or six times that rate of acceleration, their legs will telescope. An aviator, for example, whose plane is shot off a battleship at a speed of five times gravity (161 feet per second per second) weighs, for the moment, five times as much as he did on deck.



THE GOVERNOR'S

. . . two balls rise when the elevator goes too fast, cutting off the power. But if this fails, then the governor wedges the safety rope.



BURLINGAME PUBLIC LIB

Photos by Arthur Gerlach

THE RELAY BOARD

. . . on the right and the selectors to its left are the traffic policemen which put into effect the commands flashed from the signal board (in the elevator or on the wall).

The question of how fast you could accelerate the citizens and how fast this acceleration could be reached was therefore a human problem and not a problem of physics. And it was so treated. Individuals of average sensibility were run up and down the hatches of the Barclay-Vesey Building at 140 West Street at various speeds and at various rates of acceleration and their reactions noted. (The scene at the opening of the elevator doors after the maximum acceleration trip must have been interesting. But elevator employees, Otis's at least, are complacent about experiments. Otis's people ask nothing better than to be dropped experimentally a floor or two.) As a result of the Barclay-Vesey tests, it was concluded that a maximum acceleration of approximately half gravity, or about sixteen feet per second per second, was the human limit. And it was also, incidentally, decided that a speed of 1,500 feet per minute (or seventeen miles an hour) was the probable maximum running speed. It was found that a descent through 600 feet or so of increasing air pressures was objectionable if taken at speeds of more than 1,500 feet per minute. The "subjects" gave mild evidence of those effects known among deep sea divers who have been too rapidly reeled upward as "the bends."

As to deceleration — it was found that you could decelerate your load about twice as fast as you are able to accelerate it, just as you could go up faster than you are able to come down.

But what was necessary in either case was an electrical means of accelerating or decelerating smoothly and gradually. A sudden acceleration of ten, and then twenty, and then five, feet per second per second would produce the gastric spasm so well known in the old elevators of the nineteen hundreds. The electrical means was found in what Otis calls "Unit Multi-Voltage Control," and Westinghouse, "Variable Voltage Control," etc. Each elevator is raised and lowered by a motor at the top of the hatch, which motor is in turn driven by a motor-generator.

The motor-generator runs on either alternating current or direct current as provided by the city. The elevator motor runs on direct current provided by the generator. In the Westinghouse installation the motor-generator starts as the switch is thrown to start the car: the car moves at a speed proportioned to the voltage and the voltage is gradually built up by the generator. The Otis motor-generator is constantly in operation, but its voltage is graduated by automatic means during acceleration. The effect in either case is to secure rapid and smooth increase in velocity.

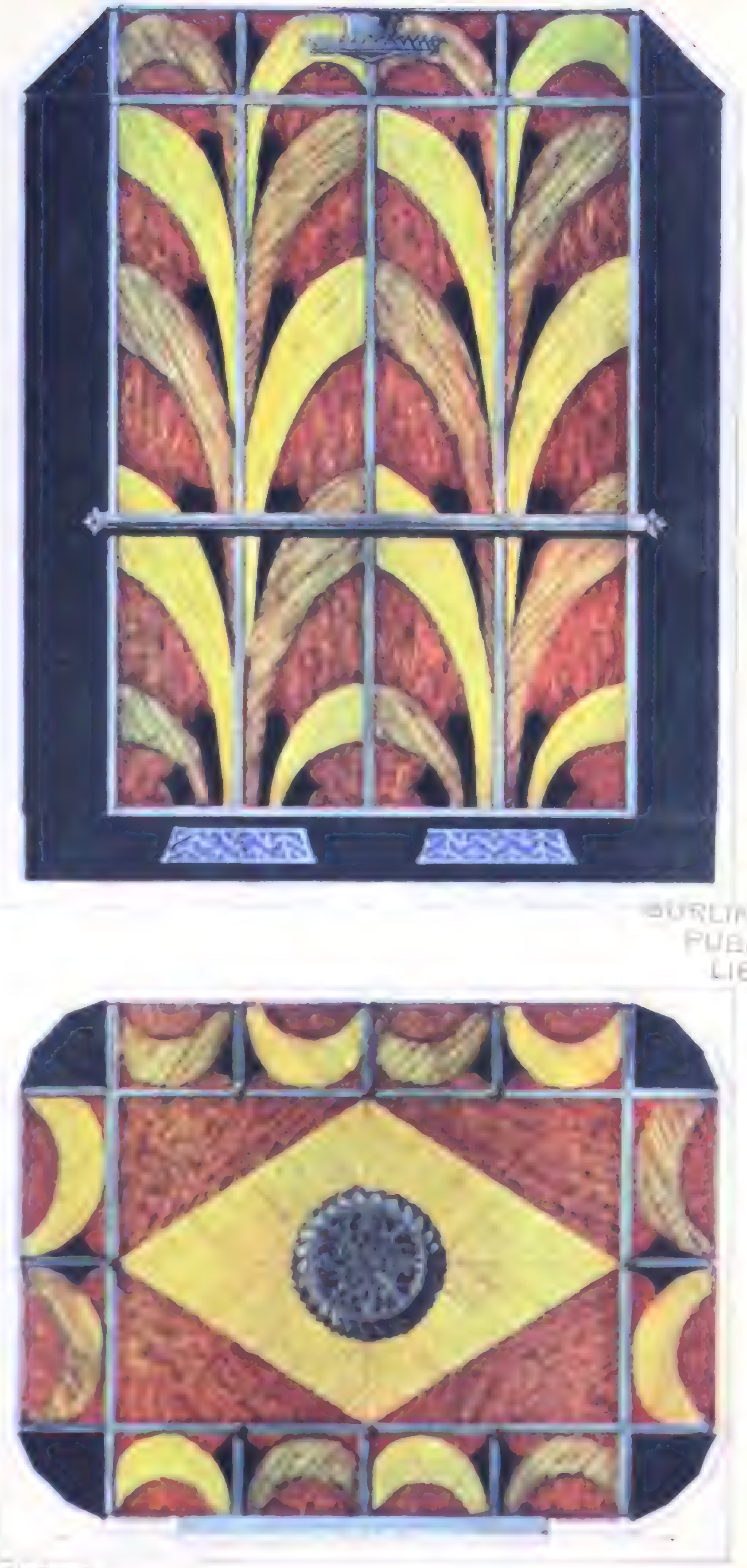
The problem of stopping the car at a given floor without lost motion was solved by leveling devices. Above and below each floor level in the Otis system is a "leveling zone" of a few feet. If the elevator has been signaled to stop at a floor, the voltage is automatically reduced by the motor-generator as the car enters the leveling zone. The car at once but smoothly loses speed. When it reaches a position level with the landing, the leveling switch is thrown into the neutral position, the power is cut off, and the brake automatically applied. Once the car has been leveled, its position relative to the floor is maintained regardless of changes in the load or stretching of the ropes. This leveling process, although slower in itself than hand leveling, allows a higher rate of speed and is estimated to save three seconds per stop.

Mechanical memory and electric wits

Acceleration, deceleration, and leveling are thus automatic in the modern elevator. And they have to be. Somewhere between 700 and 800 feet per minute the coördination of human mind, eye, and hand gives out. Also, at such speeds, the car must be enclosed, both to avoid the distressing and giddy effect of plunging doorsills on the human eye and for safety's sake—to substitute solid doors for gates. And it is very hard to run a car by hand if you cannot tell where you are. (Odd as it may seem, it is nevertheless true that the first enclosed car was built with the expectation that the operator would control it, and the unfortunate man was obliged to descend to the bottom of his shaft and cautiously bump the safety device before he could be sure he was back on earth.)

The details of this complete automatic control are still new enough o be a marvel even in New York: the long rows of electric dials in the obbies, the long rows of electric buttons in the car, the illuminated numbers that chase themselves back and forth under the *nouveau art* decorations. You go into the Otis-built elevator in the Chrysler Building. You say "Cloud Club." The attendant ("operators" are things of the vulgar past) presses a button marked No. 66. He touches a switch. The elaborate and heavy doors slide together. There is an apparently unhurried upward surge punctuated by painless moving sounds and tremulous vibrations. No. 40 lights itself back of the ground glass above the door. No. 40 ignites No. 41 and goes out. The flicker runs across the line to No. 64. The car slows down. No. 65 goes out. The doors open of themselves. Central Park is under your nose out the northward windows with the Hudson off beyond.

If you ask an elevator engineer how the car knows which of the various floors it passes is the sixty-sixth, you will merely annoy him. If you don't amuse him. But the sixty-sixth floor is as like the sixty-fourth mechanically as the sixty-fourth is like the fortieth: there are no special gadgets or triggers to fall into special slots or catches as the floor is approached. And the truth is that the car does make use of a kind of electrical memory and recollection to choose its stop. The mechanical equivalent of a miniature elevator in the machine room at the top of the hatch is driven from the car mechanism in such a way as to move up and down a miniature shaft as the car moves up and down the shaft of the building. On the scaled-down floor levels of the miniature shaft, there are floor contacts. These contacts will, when energized, first slow down and then stop the car, but unless they are energized they have no effect upon the car's movements. What happens then is this. The attendant in the car presses the button marked No. 66 while the car is standing at street level. The effect is to charge the contact point in the shaft of the miniature elevator. The car starts. The miniature elevator also starts. They climb together. The inert contacts are all passed. When, however, the miniature elevator reaches the contact in the shaft previously charged by the pressure of the car button, it sets up a current which brings about the deceleration and halt of the car at the sixty-sixth level. An attendant may



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The Tyler Co.

ONE OF FIVE

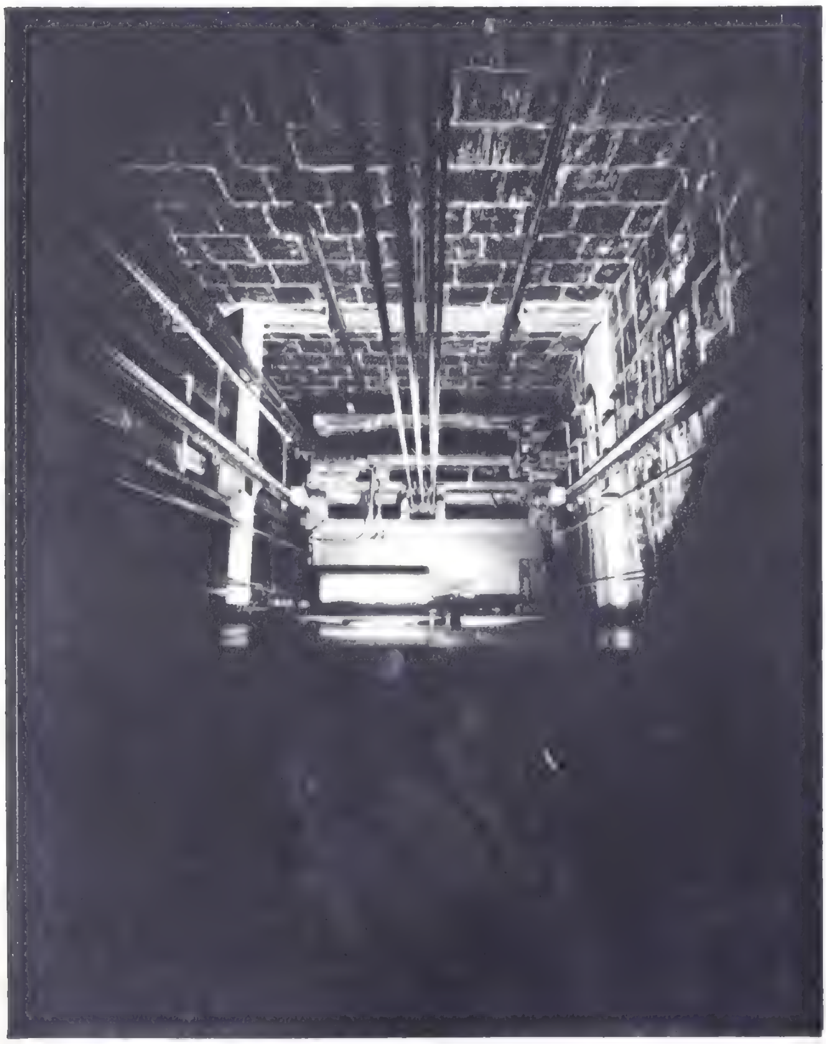
. . . designs (for walls and ceiling) used among the thirty elevators in the Chrysler Building. The Tyler Co. of Cleveland built these cars, as well as most of the spectacular cars used in the new skyscrapers. The car alone may cost as much as $5,000, while the complete elevator installation now ranges from $20,000 to $30,000.

forget which button he has pressed but a selector never forgets.

Measuring men for their elevators

A machine which can do all that is, in the words of the house organs, "just about human": a machine which can answer the bell, recognize its stops, remember its orders, accelerate and decelerate itself in perfect sympathy with the qualms of its passengers and with the greatest possible consideration for their feelings, level itself at floor level, hold itself there regardless of changes in its load, operate its own doors, keep itself from overrunning its limits, and catch itself by its own teeth if a rope breaks. But the great difficulty with the contemporary marriage of man and the machine is that it is not enough for the machine to be just about human. The human partner must also go halfway. Men must act, for the purposes of that relationship, just about like machines or the whole compact will fall to pieces.

In other words, the elevator installation of a great building is not a problem of abstract mechanics. It involves directly the human tenant of the building. But it concerns itself with the human tenant of the building less as human than as the "standard automotive package that stacks itself in one tier."



LOOKING UP

. . . one of the intricate traffic arteries which pierce the News Building on East 42 Street, New York. In these columns is told how such arteries condition skyscrapers and what, in turn, conditions the arteries.

The question is: how many elevators has the tenant got to have? And the answer (curiously enough) is: frequently. Or: not so often. That is to say, you find out what quantity of service is required by finding out first of all what quality of service the tenant wants.

Quality of service, to an elevator man, means frequency of service. To find out what quality is desired, you consider the prospective tenant. You say to yourself: how long can we expect this particular automotive unit to wait for a car without becoming impatient? You watch the behavior of similar units. You observe that they will cheerfully wait in the rain to get through a street door but that they will become uneasy and dissatisfied if they are obliged to wait more than a few seconds in the dry, warm lobby for a car. You then ask yourself how long this particular type can be expected to stay in the car once he is in it. As to that, you observe that people in motion in any direction, up, down, or sideways, are remarkably patient. They have the sense, or the illusion, of going somewhere. And it calms their souls.

Your conclusion as to the mental habits of the type of tenant expected will fix the frequency of car departures from the street floor —say once every twenty seconds for super-service and once every thirty-five seconds for casual service. And the round trip time will necessarily be six times the interval of departure if there are six cars in a bank, etc. Knowing the frequency of departure, you know how long each car will stand at street level and hence how many people can conveniently get into it. And hence how big it should be.

Knowing how many people can get into one car, it is a simple matter to find out how many cars the building must have. The total number of people who can be expected to use the elevators at any one time divided by the number who can be expected to get into one car is the number of cars that must leave the terminal landing in this time. But the catch is, of course, to know what proportion of the estimated population of the building can be expected thus to arrive on the stroke of nine and to leave on the stroke of five. The answer depends again upon observation of the habits of the tenants—how they come to work—how they go home—where they eat lunch—how many visitors they have, etc.

For example, if the building is near a subway exit, the tenantry will arrive in freshets which will have to be strained through revolving doors. Whereas if the building is a block or so away, the variations in human walking speed will loosen up the crowds. Again, if the building is altogether occupied by one tenant the traffic peaks, unless arbitrarily controlled and staggered, will be extreme. So insurance companies. But if the building has diversified occupancy, the peaks for various tenants will overlap.

In general, for buildings in New York having diversified financial occupancy, it is probable that 35 per cent of the population of the building will arrive and depart within a period of fifteen minutes. And the number of elevators is fixed on this basis. But such decisions are necessarily theoretic and subject to empirical correction. Only the experienced engineer knows how misleading his own methods of preliminary computation can be to the layman.

As skyscrapers go up in height and the number of cars required increases, a point is reached, as has been previously noted in this series, at which the elevator hatches seriously encroach upon the rentable floor space. Various solutions have been offered. The first is to run two cars in the same shaft—an express, above, serving upper floors, and a local below with an automatic guiding device of the type now used in the subway to prevent collision. Equipment for such a system has been installed in one building but will not be used until some one else tries the system out. The second is to run two cars in the same sling, one above the other, moving together and serving alternate floors. The third is to run large express elevators stopping at every tenth floor with side locals between. And the fourth is to start tall buildings over again at, say, the fiftieth floor: a new ground floor with shops, lunch rooms, etc., so that people in the top of the building will go down to the fiftieth floor for lunch, etc., and a new elevator system will begin at the fiftieth floor and run on up. All of these suggestions present obvious difficulties.

Even in contemporary structures, however, the problem is difficult enough and remains difficult in operation. Since the whole system is based on the car interval, that interval must be rigidly observed. Few starters can do it unaided. Therefore what amounts to automatic starting is used in almost all modern skyscrapers. Each car (the Irving Trust Building offers the example) has three lights, red, green, and white. And three similar lights, representing the car, appear on the starter's instrument board. A mechanical timing device which can be set ahead for rush hours and back for slack periods operates both sets of lights. When the light in a given car and on the board shows white, the car starts. When it shows green the car, at the top of its run,

[*Continued on page 105*]

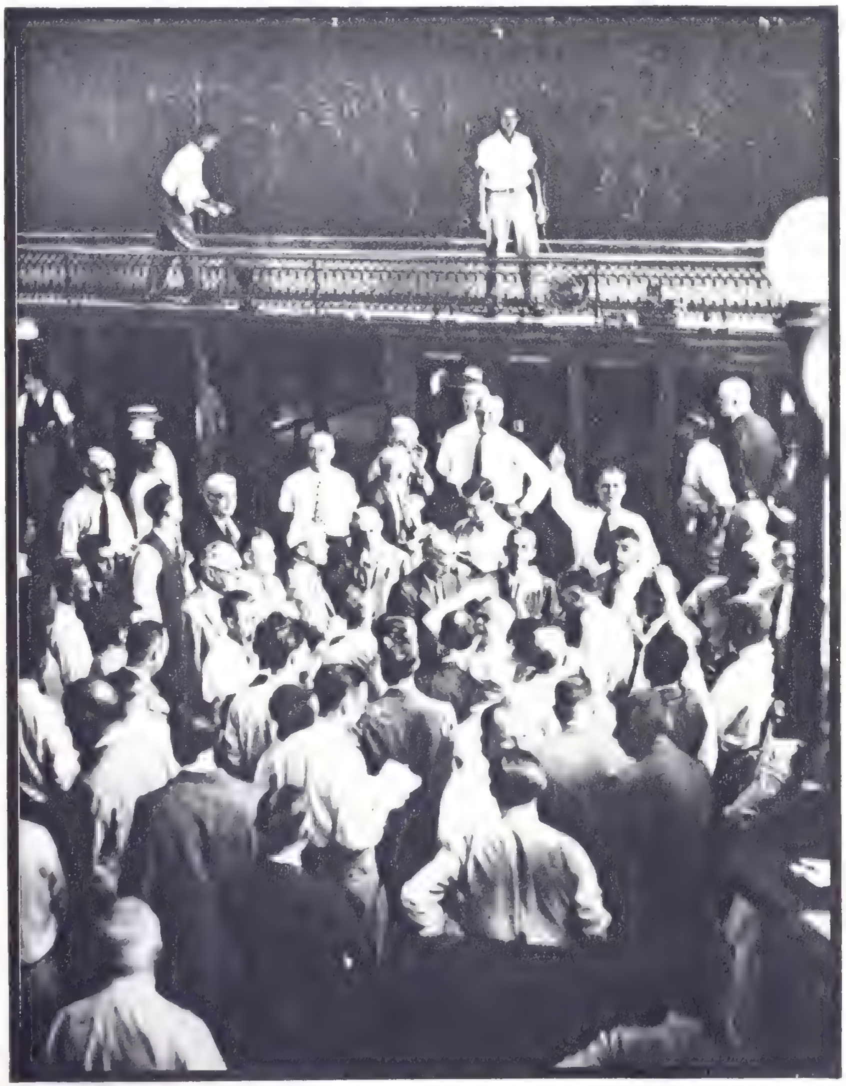
Wheat to Flour to Bread

Key factor in this basic triple play is biggest General Mills, which looks indifferently at the farmer behind it and confidently at the housewife ahead of it. Key city is Minneapolis. Key names: Bell, Crosby, Pillsbury, Heffelfinger, etc. . . . Key fact: four and one-half bushels of wheat make one barrel of flour.

MINNEAPOLIS stands at the head of the waters. The lakes above her and the springs under her streets pour out the Mississippi. For more than 2,000 miles from her culverts, the river drains down through the shallow tilting of the continent to the sea.

Minneapolis is not a port. The river here is a swirl of water over boulders through a broad channel of the land. Minneapolis is an origin, a source. Lumber came first. They cut the flat land for the farms and the hills for timber. And the fortunes made from lumber still remain. They remain in the person of Arthur R. Rogers and the symphony, the opera house, the community fund. Lumber is old enough so that its gold has undergone the slow sea-change of leisure. It has turned to books and galleries and marble. It is mature. It has retired.

Wheat followed lumber at the rail-heads of the town. It was the natural season of that land. As the wood was cut and the sawmills moved, the settlers followed. They burned the slash, grubbed up the stumps, and planted. Their wheat came down the prairies following the streams. It flowed into Minneapolis. The elevators stood like reservoirs, gathering the harvest freshets and dribbling them evenly out by rail, by the Chicago, Milwaukee & St. Paul and the Chicago & Northwestern to Chicago, by the Great Northern to Duluth and down the Lakes, by the Chicago, Burlington & Quincy to the navigable reaches of the river. And wheat brought its fortunes: the Crosbys, the Pillsburys, the McMillans, the Heffelfingers (whose name, thanks to the great Pudge, makes flour taste of football in the East). It built the fashionable summer suburb of Wayzata. It pays for Highcroft and for the annual Heffelfinger party on those hills. It cuts the bent grass on the greens at Minikahda. It buys the flowers and the college-boy orchestras and the buffet suppers for half the best-known débutantes in the city. It pays a good percentage of the club dues at the red brick, ivy-growing, male only, Minneapolis Club. And it mixes in everything. Mr. Webber of the Deere & Webber Company makes the plows that plow the ground that grows it. Mr. Nelson Dayton sells the furs that warm the throats of those whose husbands grind it. Mr. Decker (president of the Northwest Bancorporation) lends the cash that buys the seed that sprouts it. And so it goes.



Photos by Rittase

WITH THIS PANDEMONIUM

. . . in the Minneapolis wheat pit, the miller has little concern. Though the Soviets sell short, though wheat falls to seventy-four and one-half cents, General Mills never makes or loses a dollar on the price of its raw materials.

Wheat has but one possible competitor among the natural products of the land. After the forests are cut and after the earth has been turned over, men look under the earth. In Minnesota they found what they were looking for. They found ore. Ore produced the retiring Mr. Russell Bennett and his income, said to be the largest in Minneapolis. Ore now flows with wheat and with the last cuts of timber down the railroads, down Superior and Michigan and Huron. Down from the head of the waters.

THE COMPANY

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IT WAS not many months ago that a famous and competent investment trust made this announcement: *In view of the prevailing price of wheat, in the face of overproduction and the excitable wheat market, it is deemed inadvisable to retain holdings of stock in the large milling companies.* The millers were both irritated and amused. Irritated, because they wanted their stocks held at a satisfactory level. Amused, because this particular investment trust simply did not know what it was talking about. Any miller will tell you that such an instance is by no means isolated. There is the case of Moody's, for example, who, in an "outlook" statement, announced last year that millers' prospects were not favorable, that millers' earnings would be somewhat decreased this year, reflecting the low price of wheat and the large quantities of wheat the millers must necessarily store. Moreover, bankers of intelligence have been known to question the advisability of lending large sums of money (General Mills may borrow $1,000,000 in one day) when wheat prices are low.

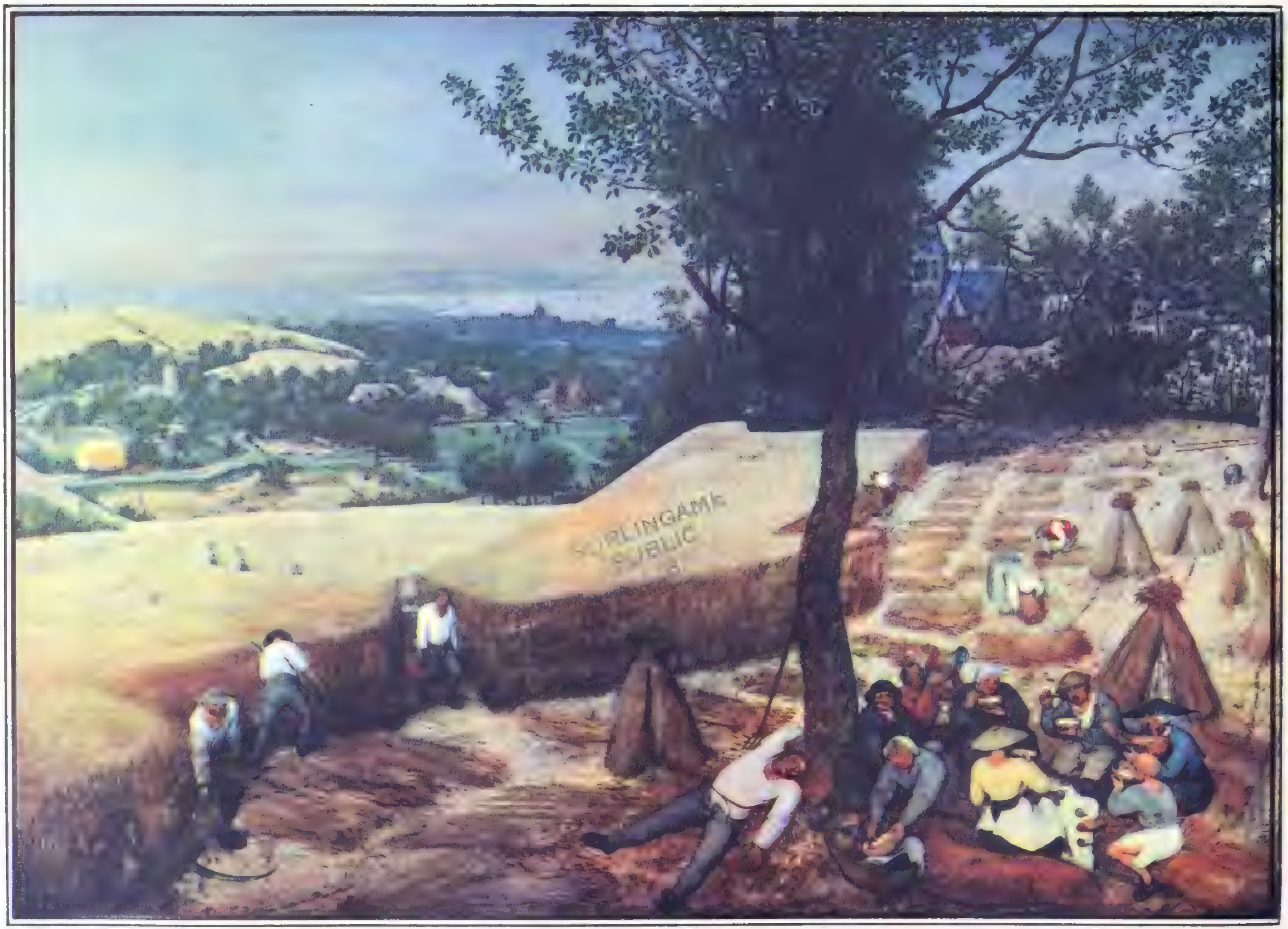
Actually, the profits of the miller are not in the least dependent on the price of wheat. For this apparent paradox, the miller's word need not be taken. Proof lies in two facts, neither of which is widely comprehended. The first is that bread, the most staple commodity in the universe, together with its related bakers' products, accounts for some 30 per cent of the consumers' food dollar. In the cities where bread must be bought at bakery prices, the percentage is higher (perhaps 40 per cent). In the country, where housewives still know what ovens are for, the figure is lower. But as a rough rule, this is convenient: about 30 per cent of the national dollar goes for food; about 30 per cent of the national food dollar goes for bread. The second proof of the independence of farmer and miller is to be found in the operation called hedging. By refusing all speculative profit or loss in buying wheat, he becomes indifferent to price fluctuations in his raw material, and as wheat drops from low to panic low, is no more or no less prosperous than when the price per bushel was above the dollar mark but a few months ago. He still finds his profit in a dollar bill, which is the difference between the cost of four and one-half bushels of wheat and the selling price of a barrel of flour. That dollar bill must (and does) cover conversion cost, selling expense including advertising, and the miller's profit.

The wheat farmer, who is not prosperous, has two opinions of the miller, who is. At times, and they are many, he considers the miller a great ogre who gobbles up all the profits, while he, the farmer, must go to his bank for a loan. At other times he thinks the miller a fine sort of fellow, simply because he remembers something, which is that the miller buys 80 per cent of all the wheat the farmer grows.

The miller is of a different turn of mind. He really has no opinion at all about the farmer, one way or the other. His attitude might be called that of benevolent neutrality. Or it might even be called apathetic. The farmer grows the wheat. The miller buys it, at current market prices, and makes the flour. He sells the flour, at current market prices, and makes the money. The farmer holds the bag, and when he has time to think about it, the miller is extremely sorry. But because of competition and other things he could not, even should he want to, regulate the price of wheat. Thus the miller misses being called a Bad Man of Industry and is, instead, a much respected individual. Or, as in the case of General Mills, Inc., a very large and very prosperous and much respected corporation.

· · ·

General Mills was formed two and one-half years ago; to be precise, on June 20, 1928. Before then it had a more familiar and, it might be said, a more distinctive, name. Washburn Crosby has been flour, and lots of flour has been Washburn Crosby, for more generations than most bread-eaters can remember. But there were plausible reasons, sound business reasons, why the name Washburn Crosby was not retained to represent the whole new company instead of only that part of the new company which was the old. Once Washburn Crosby consisted of mills at Minneapolis, Buffalo, Kansas City, Louisville, Chicago, and that was all. But when the corporation was created, another matter required consideration: the units coming



Courtesy of the Metropolitan Museum of Art

THESE HARVESTERS, PAINTED BY BRUEGEL, MADE THEIR OWN FLOUR BEFORE THE MILLING REVOLUTION into the organization, such as the Sperry Flour Co. on the Pacific Coast and the Red Star Milling Co. in Kansas, had brand names of their own which in their respective territories were looked upon with as fine favor as Washburn Crosby's Gold Medal Flour was in its. More, these companies (two were finally joined together) were all, without exception, profit-making concerns. Thus it became psychologically impossible to preserve one identity while discarding thirty-two.

But even now, with its arms stretching into every important flour-milling area of the U. S. (and three or four million barrels going into the important foreign markets), there are still reminders, at Minneapolis, that General Mills was once a small company founded by a man named Washburn, that it grew under him and a man named Crosby, that not many men are responsible for its peculiarly unique place in a large industry. At the entrance to the General Mills offices the welcome mat still inquires *Eventually—why not now?* It is still fashionable in Minneapolis to know, and to be entertained by, a Crosby. And on the wall of many an executive's office hangs a picture of a bearded gentleman whose name is Barnum and who, proverbially, was right.

There are other signs of the early days. And there are other names. The greatest of these is Bell—James S. Bell, who died in 1915, and his son, James Ford Bell, who today is president. The Senior Bell came from Philadelphia, where there are still socially-minded Bells a-plenty and a Bell Mill Road. He was brought to Minneapolis in 1888 when John Crosby—the first Miller Crosby, the fourth John in the line (there is now a sixth)—died, and the remaining members of the firm "for various reasons could not take his place." James Bell's father had been a flour merchant in Philadelphia. His grandfather, and Bells for generations before that, had been millers. To this new arrival, then, the company looked for great things, particularly when its surviving members considered that neither Founder Cadwallader C. Washburn nor Partner John Crosby had been practical millers. General Washburn had been for a long time in the public eye, first as a Congressman and then as Governor of Wisconsin; John Crosby was a paper man from Maine. And both of them were dead. But what these men did not know about milling they made up for with vision, enterprise, and a tremendous capacity for work, and so upon his arrival at Minneapolis Mr. Bell found three Washburn Crosby mills with an annual output of 1,287,000 barrels of flour, a prosperous company, and the "milling revolution" a thing of the past.

Mr. Bell knew something about this slight revolution, but most people did not, for although important to millers (and tragic to some), historically it was given little recognition. Just two things happened, and except for them the conversion of flour into wheat remains just the same process—with of course improvements and refinements—that it was hundreds of years ago, when a millstone did everything but bake and eat the bread. The first occurrence—to Washburn Crosby it meant the elimination of a most discouraging handicap—was the introduction, in 1870, of the middlings purifier, an unimposing device that by removing certain flinty particles improved the quality of the flour and made it white. Northwest wheat was spring wheat, and spring wheat was often dark in color, "nutty" in flavor. Worse, spring wheat sold for about twenty cents less a bushel than winter wheat, which was king. The middlings purifier brought a new king to the Northwest, spring wheat, and it was ransomed, often enough, at a higher price than the old.

The other step in the milling revolution was the discarding of the time-old millstone and the substitution of the roller mill, which is exactly what its name implies: a set of steel rollers that grind the wheat. Thus wheat could be milled many times faster than before and thus the capacity of mills greatly increased. The principle was invented in 1820, but the roller mill went through many stages of development, and it was not until 1879 that General Washburn installed the first automatic roller mill.

Then the milling revolution was over, and the industry was off to a fresh start. So far as production problems were concerned, the stage was well set for the able Mr. Bell. But the industry as a whole reposed, in the eighties, upon an economic basis which was anything but sound. Wheat speculation among millers was running wild. In the year 1889 many Minneapolis millers, small foolish fellows who thought they knew what was going to happen next in the wheat market, took the veil of bankruptcy. Fortunately, Mr. Bell had been tutored in a sober Quaker school of thought and did no such thing as to attempt to prophesy wheat trends. He ended the year—called by contemporaries the worst for milling in the Northwest — successfully, and Washburn Crosby Co. was incorporated with a capitalization of $500,000. About this time, there was a strike, which confused matters, and a man by the name of McIntyre attempted to form a flour trust. It was the first and last attempt and it failed; by 1900 the McIntyre company had gone into receivership. While Mr. Bell and his company eventually gained by this fiasco, it added to the general unsettlement of the nineties.

One most constructive step taken in this period should not be overlooked. Shortly after his arrival in Minneapolis, Mr. Bell found a gold medal. As it turned out, it was to be *the* gold medal which today still exists in spirit (the original has been lost) to denote the biggest selling brand of flour in the world. Observe the difference between it and sundry other gold medaled substances: the Washburn Crosby medal was actually awarded the company at the Millers International Exhibition in Cincinnati just fifty years ago, for the best spring wheat patent process flour exhibited. A Gold Medal brand was indeed being marketed along with a Superlative and an Extra and a Triple Extra. It remained for Mr. Bell, through the good advice of a smart advertising manager, to dangle the Gold Medal before the public, and gradually allow the Extras to be forgotten. This was the real genesis of the great brand. The same advertising genius (Mr. Benjamin S. Bull) originated *Eventually—why not now?*, and while the heyday of this catch phrase is over, it was for a time the most widely known slogan in the U. S.

BUYING WHEAT FROM SAMPLES

. . . is a necessity for the miller. This because the seller of futures need deliver only minimum quality. Illinois grain standards specify that the delivery of No. 1 Hard Red Spring Wheat must be bright, cool, and sweet; minimum weight of fifty-nine pounds per bushel; containing not more than 14 per cent moisture. This minimum is exactly what the miller would get, if he bought a future. But he needs even better quality. Hence he buys cash grain, at sight.

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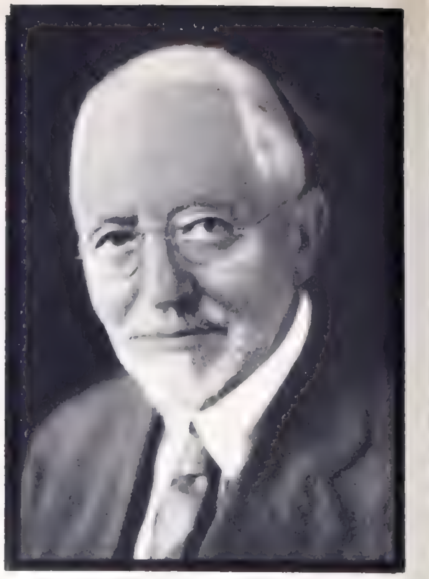
The Millers of Minneapolis

Have in their hands the destiny of the city's chief industry. As a group, they have made notable contributions not only to the city's continuing prosperity and civic integrity, but also to its growing culture and its already gay social life.

Blank-Stoller

JAMES FORD BELL

President and chief of General Mills, the son of a practical miller who grew up in the business.



ALBERT CARPENTER LORING

. . . seventy-two, Milwaukee-born, has been a miller for half a century and president of Pillsbury Flour Mills, since 1908.

Gene Garrett

FRANKLIN MUZZY CROSBY

. . . buys wheat for General Mills and is a charming, cultured member of Minneapolis society.

Gene Garrett

DONALD D. DAVIS

Vice president of General Mills. He resolved as a college student to move from business to business until he was thirty-five.

Lee Brothers

JOHN S. PILLSBURY

Who worked through all departments of the mills, became sales-manager, secretary, treasurer, is now an able vice president.

CHARLES S. PILLSBURY

Twin brother of John, cousin of veteran treasurer A. F., director of a score of Minneapolis enterprises.

Blank-Stoller

GEORGE K. MORROW

When Gold Dust absorbed Standard Milling Co., in 1929, Gold Dust's chairman found himself a miller, as well as a maker of shoe polish, soap, cereal, etc.

Blank-Stoller

HARRY S. HELM

President of Russell-Miller Milling Co., who last August announced that a new holding company, Russell-Miller, Inc., would take over the company's subsidiaries.

Blank-Stoller

W. C. HELM

Vice president of Russell-Miller. Properties at Minneapolis, Duluth, and Buffalo will be united in the new holding company, capitalized at $12,000,000.

SHREVE M. ARCHER

Able president of Commander-Larabee Corporation, which has a daily capacity of 30,000 barrels of flour. Chairman is Guy A. Thomas.

Mr. Bell died in 1915; the intervening years had seen great growth. Washburn Crosby capital had mounted to $6,000,000, and daily capacity of the various mills had jumped from 10,000 to 45,000 barrels a day. And, indeed, flour began about this time to assume a climactic importance in the nation's life. In 1917, came a message to Mr. Bell's only son, then a Washburn Crosby vice president, from Food Administrator Herbert Hoover. Would he go at once to New York and take charge of the entire country's production and distribution of flour? He would. But he found it a thankless task, and when the War was over, he was glad enough to go back to Minneapolis.

He took with him a deal of experience and found a valuable young man named Donald D. Davis. This last gentleman had in his college days resolutely made up his mind to move from one business to another until he was thirty-five. Then he would decide what he liked best to do. When he came with James Ford Bell to Washburn Crosby, he was thirty-four and his wanderings were over. John Crosby (second generation) was then president: in due course of time he became chairman. James Ford Bell moved to the presidency and Mr. Davis became secretary and treasurer as well. Of the old family names, that of Washburn has disappeared in the General Mills of today. Besides the chairman, the company owns one other Crosby—Franklin Muzzy, he with the down East accent and the charming manners. These three—Bell, Davis, and Crosby—are the outstanding names in General Mills executive policies.

Mr. Frank Crosby purchases the wheat, 100,000,000 bushels of it a year. The daily capacity of all the company's mills is 85,600 barrels of flour. Mr. Davis, among other things, is in charge of advertising, which is so important to General Mills that from $2,000,000 to $3,000,000 are spent on it a year (in 1890, Washburn Crosby spent $40,667 on advertising and competing millers thought its spenders crazy), and the company owns its own radio station, WCCO. Mr. Davis also was instrumental in establishing a retail outlet for feeds. General Mills, the miller, is also a chain-store operator, to dispose of the feeds, which are important by-products of flour making. So important are they, in fact, that they normally constitute 20 per cent of a miller's sales. On this 20 per cent he must assume the risk since the hedge of an equivalent amount of wheat is not an effective insurance against feed prices, which have their own laws of supply and demand. This is the only major flaw in the miller's protection against price fluctuations.

Heaviest executive responsibility falls upon Mr. Bell. General Mills is the largest miller in the world and must inevitably be an infinitely complex industrial organization. It owns 255 county elevators and grain elevators—capacity 11,759,000 bushels of wheat. It has terminal grain storage capacity of 36,292,000 bushels; ten proprietary feed mills; two cereal food products mills; sixty-eight branch offices and warehouses. It has a Products Control Department, which acts as liaison officer, has knowledge of grain conversion possibilities. There are twenty control laboratories, a research department with a brand new building at Minneapolis, where are met problems such as flour color (ordinary bleaching alters the baking qualities of flour) and by-products (the famous wheat germ, once fed only to animals, contains valuable vitamins, is now being experimented with successfully for pellagra treatments in the Carolinas).

Come what may on the wheat exchanges, General Mills makes money. There have been two annual reports of the consolidated company, sixty-two of Washburn Crosby. Neither has ever shown a deficit. If General Mills men like to boast proudly of these facts, it is only because the facts deserve a boast. Net income for the company as of May 31, 1930, was $4,609,101.49—$500,000 higher than it was as of May 31, 1929 (although the two figures are not comparable as a means toward showing more efficient operation or selling effort, because during the year new companies were added). After dividends on common and preferred stock and after deduction for various miscellaneous items, the earned surplus was $2,869,444.71. Sufficient proof, this, that the miller's profits are narrow when you realize that General Mills' net sales last year were $163,071,661.73.

[*Continued on page 116*]

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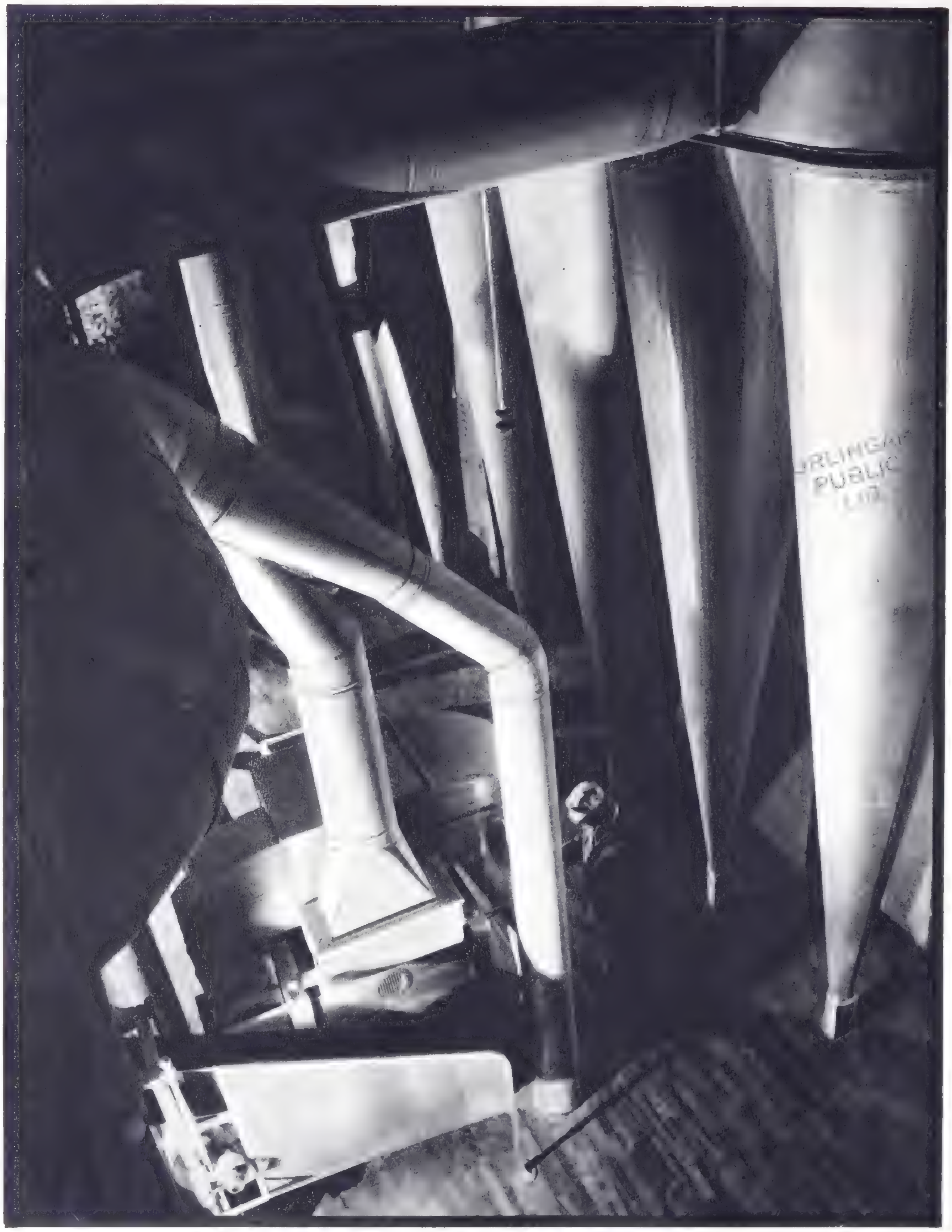
THE WHEAT COMES IN

. . . by rail to the great storage tanks at General Mills. The conveyor near the top center of the picture carries the wheat from storage to the mill at the left.



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MODERNISM AT GENERAL MILLS

THE MAN STANDS AT A WHEAT CLEANER. IN THE BACKGROUND ARE THE DUST COLLECTORS WHICH KEEP THE AIR CLEARED IN THE DUSTY MILLS

The Tale of the Sultan's Wives

The dentist of Constantinople and the $1,000,000,000 lawsuit.

"IN CONSTANTINOPLE," the 1,002nd tale of Scheherazade might well begin, "there lives a dentist." He is short, voluble, Jewish, and his name is Dr. Samy Gunsberg. He is undoubtedly the most remarkable dentist in all Turkey, if not in all the world. Professionally Dr. Gunsberg is impressive: he was the personal dentist of Sultan Abdul Hamid ("the Terrible," "the Damned"), who gloomily ruled Turkey up to 1909, and he is today the personal dentist of Mustapha Kemal Pasha, who has dictatorially ruled Turkey for the last seven years. If Dr. Gunsberg is impressive as a dentist, he is positively awe-inspiring as a lawyer. For it is the energetic, diplomatic Dr. Gunsberg who is at the head of the legal forces in what is unquestionably the most spectacular inheritance lawsuit of the century.

When Sultan Abdul Hamid gave up the ghost and (presumably) became the Damned indeed, he left behind him a name execrated in every civilized country and in many a barbarous one, and a personal fortune that had won him the title of the "Richest Man in the World." Oriental opulence is not accurately measurable in terms of occidental dollars, francs, or pounds, but a fairly conservative estimate of Abdul's wealth would place it at a round $1,000,000,000. It consisted partly of precious gems, but for the most part of divers pleasant estates in outlying sections of Abdul's empire. These spacious country estates include half of Salonika, a big slice of Macedonia, large segments of Syria, Mesopotamia, Palestine, Thessaly, and Cyprus, the zinc-wealthy island of Tassos, and a goodly portion of the rich Mosul oil fields. Abdul, who refused to allow General Electric to import dynamos into Turkey when he learned the machines whirled at the blasphemous rate of 1,200 revolutions per minute, was not the man to exploit the industrial possibilities of his lands. Yet his revenues from them are said to have come to $15,000,000 a year.

Abdul Hamid did not die the Richest Man in Europe. Deposed in 1909 by the Young Turk uprising, he was stripped of all his possessions and finally thrown into prison, where he died miserably in 1918. After the War many of his estates passed from Turkey to the victorious Allies. But while Abdul's rich lands were handed from the Young Turks to France, Italy, Greece, and England, there sat at the banquet board one very large and very hungry contingent which felt itself unjustly passed over: the heirs of Abdul the Terrible. The number of these malcontents is matched only by their determinations to collect heavily from Italy, France, and the rest for the broad lands so rudely snatched away from them.

N. Y. Public Library

SULTAN ABDUL HAMID II

Whom history remembers as "the Damned" and "the Terrible," whom his heirs remember as the "Richest Man in the World."

A detailed enumeration of Abdul's heirs would verge on pedantry. At the head of the family, of course, is Prince Abdul Medjid, now living in Nice. The active claimants in the various suits now under way are:

> Prince Nourreddin, Prince Abid, Prince Ardurrahim, Princess Naile, Princess Aiche, Princess Refie, and Princess Chadie, sons and daughters of Abdul;
>
> Bedrifelek, Abdul's No. 1 wife, and her three children: Prince Selim, Prince Ahmed, and Princess Zelie;
>
> Prince Abdul Kadir and Princess Naimee, children of Abdul's second-best wife, Bidar, who is now dead;
>
> Prince Bourhanneddin and his mother, another of Abdul's ex-wives. Seven more wives, namely: Fatima, Behidje, Mouchfika, Nadjie, Sazighiar, Emsalinour, and Peiveste —and their respective mothers.

For five years this heterogeneous mass of heirs, scattered over Europe and Asia, has been trying to recover part or all of the $1,000,000,000 legacy. Their contention is that the confiscation of Abdul's *personal* property by the Young Turks, the Allies, or any other government is illegal. A main basis of the contention is a clause in the Lausanne Treaty of 1923 providing that the private property of Turkish citizens is to be respected by the various Allied nations that took over part of the Ottoman Empire after the War. To this the various Allied nations reply that Fatima, Mouchfika, and the rest are not Turkish subjects because all heirs of Abdul Hamid were deprived of their nationality by the National Assembly at Angora. To which Fatima, Mouchfika, *et al*, reply through Dr. Gunsberg: once a Turk, always a Turk.

The case has its strong points, and there is now behind it an active group of British and American capitalists. They have spent a good sum already on collecting 50,000 title deeds to the Sultan's properties. They are said to ask 35 per cent of all proceeds, certainly a moderate figure. Various corporations, as Anglo-Hellenic Corp. and Valideh Trust, Ltd., have been organized to prosecute the case. Most active at present is Ægean Financial Trust, Ltd. The remarkable Dr. Gunsberg states himself to be president of all these corporations.

Although the case has been dragging its ramifications through various courts for nearly five years, until lately its prosecution has been in hands drooping with oriental languor. There is one notable exception: Prince Abdul Kadir, $20 a week fiddler, of whom more later. The advent of brisk little Dr. Gunsberg is comparatively recent and most hopeful. In control of affairs there is now a highly effective combination of Hebrew cleverness and Anglo-Saxon determination.

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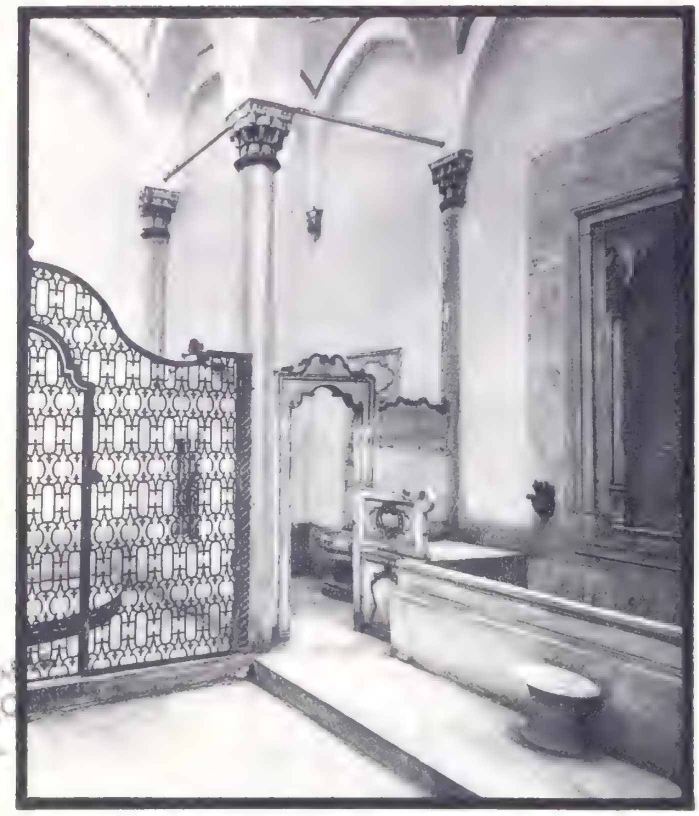
International

PRINCE ABDUL MEDJID EFFENDI

Abdul Hamid's first cousin, heir presumptive to the throne (when there was one), one-time Caliph of the Moslems, and present head of the Ottomans.

Within the Royal Seraglio at Constantinople:

At the uttermost point of the Golden Horn, directly opposite that Scutari of Florence Nightingale and Crimean fame, is the Palace of the Sultans. Only within the year has the palace been thrown open to



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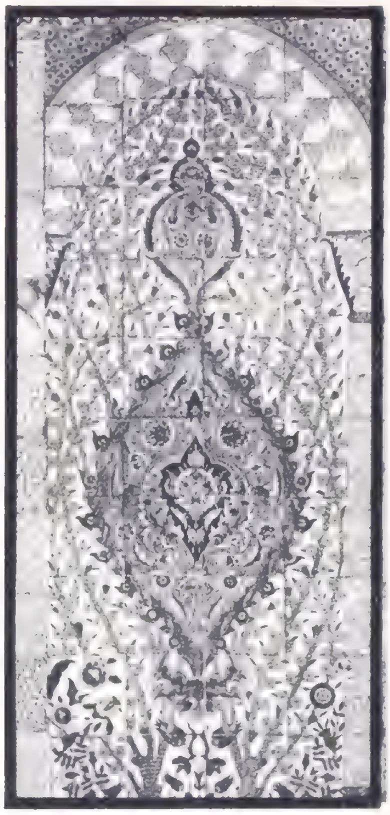
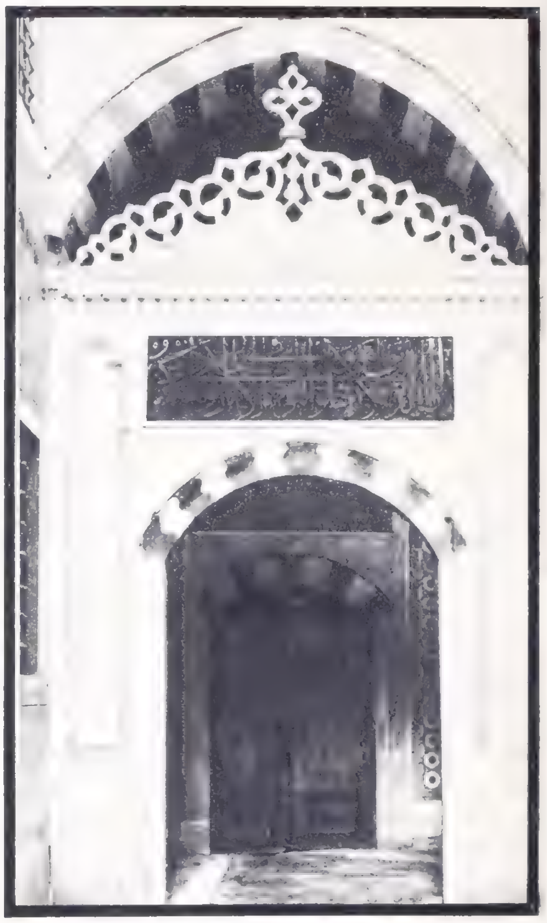
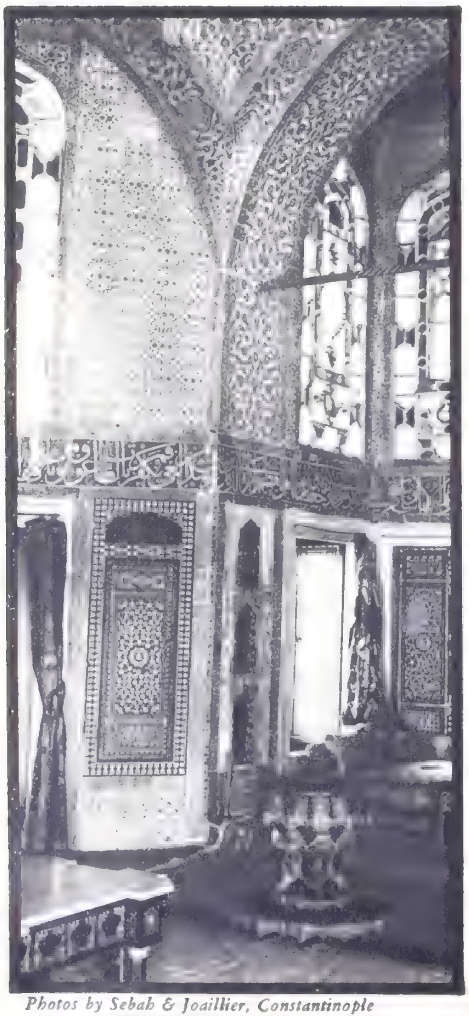
THE HOT BATH OF THE SULTAN



FAIENCE WORK (DETAIL)

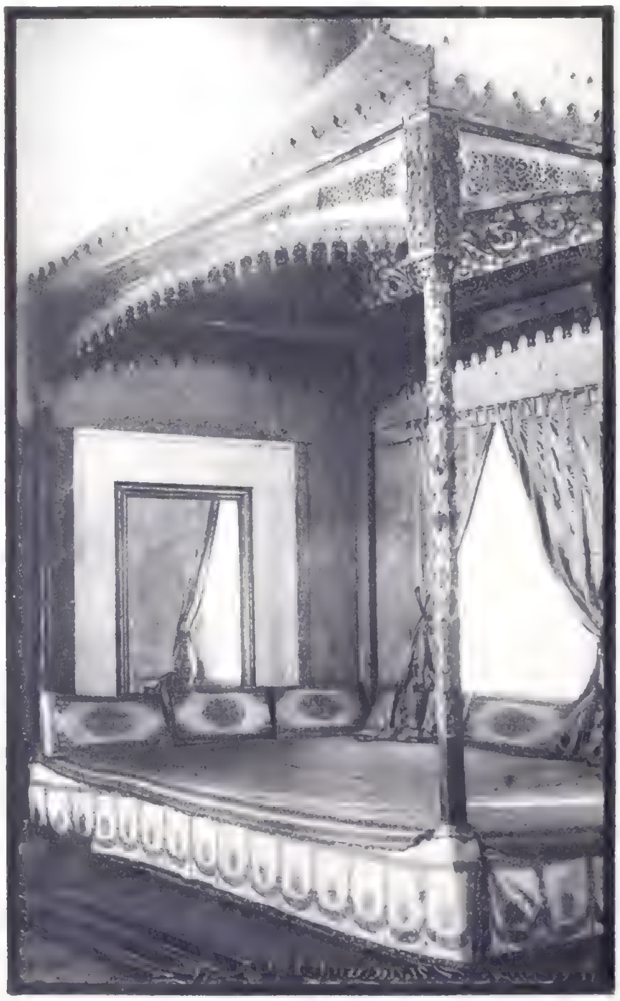


THE GATE OF FELICITY

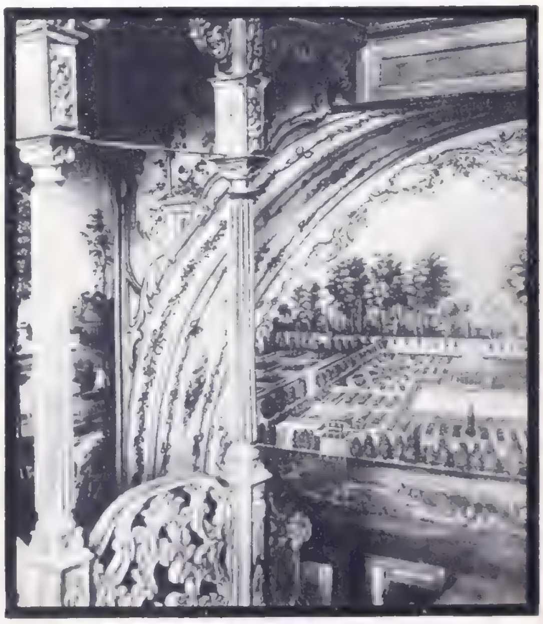


Photos by Sebah & Joaillier, Constantinople

THE KIOSK OF BAGDAD



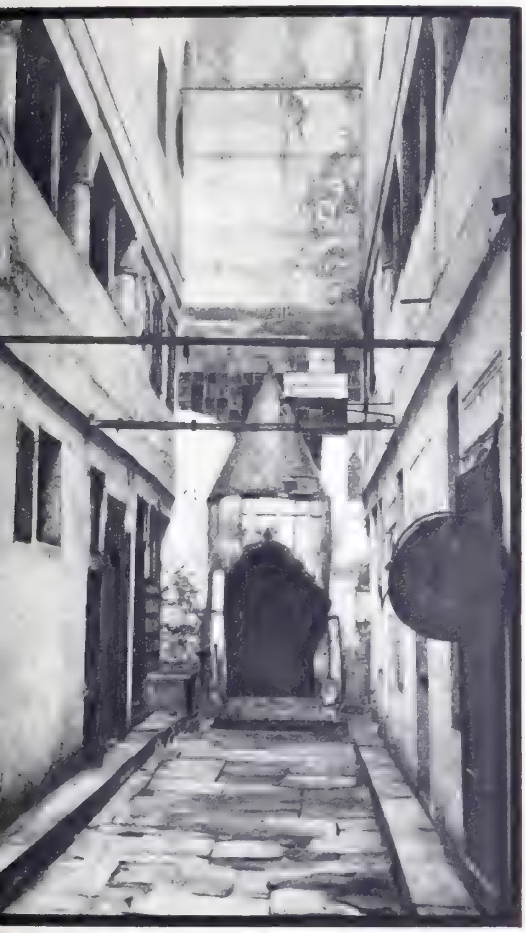
GREAT THRONE OF THE ARZ-ODASSI



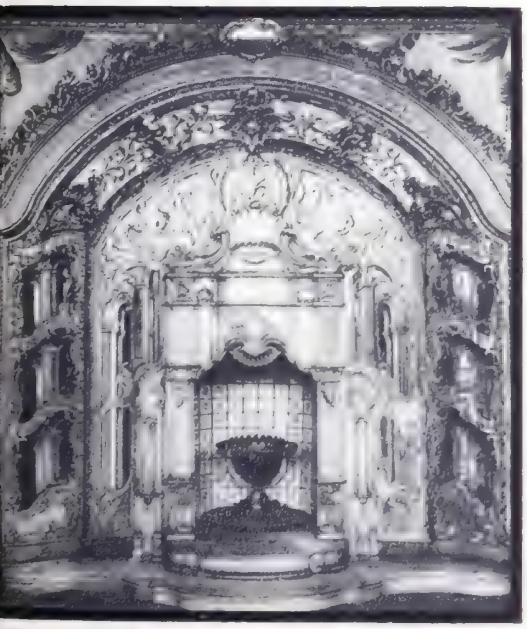
THE QUEEN MOTHER'S STAIR

Here Lived Abdul the Terrible and His Favorites

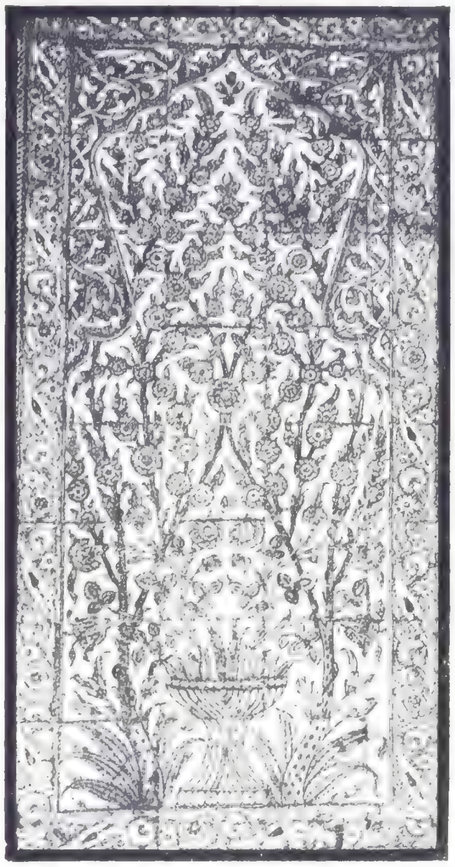
isitors as a museum. Now for the irst time the Gate of Felicity, as the ntrance to the harem is called, is pen, and those who are not Sulans may pass through it and live. Abdul's heirs bemoan its loss.



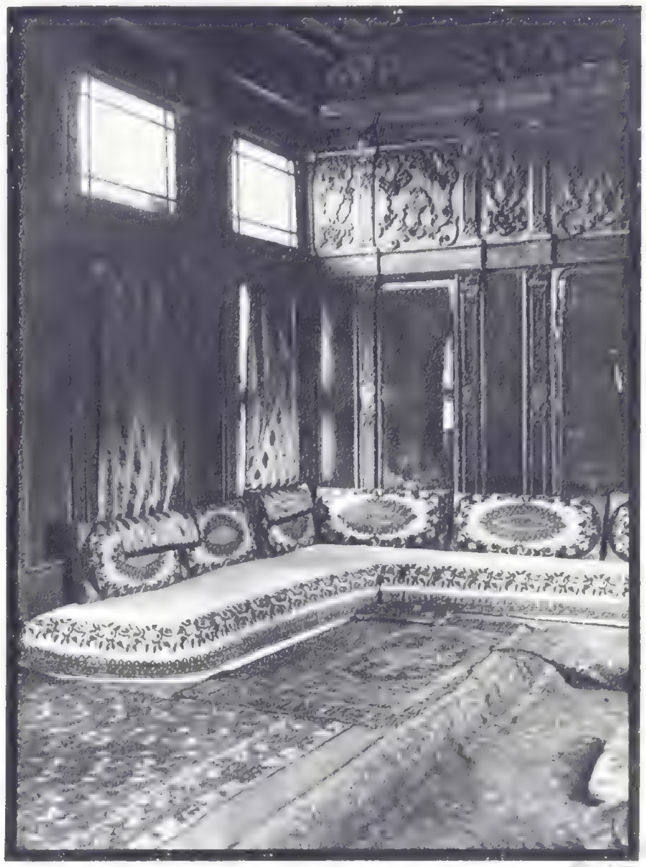
CORRIDOR OF THE EUNUCHS



SALON OF SELIM III



FAIENCE WORK (DETAIL)



SOFAS IN THE GREAT HALL

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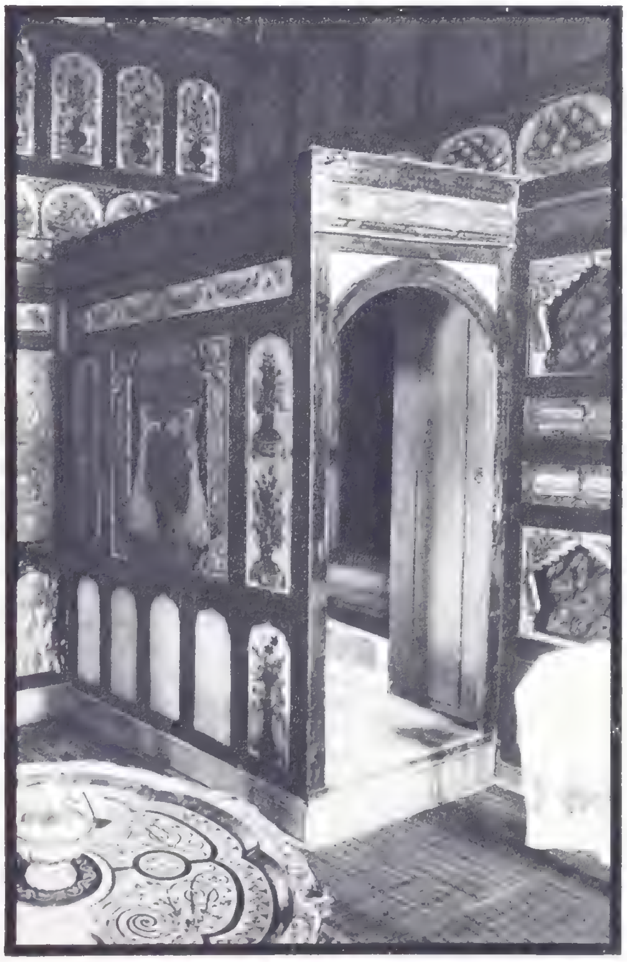
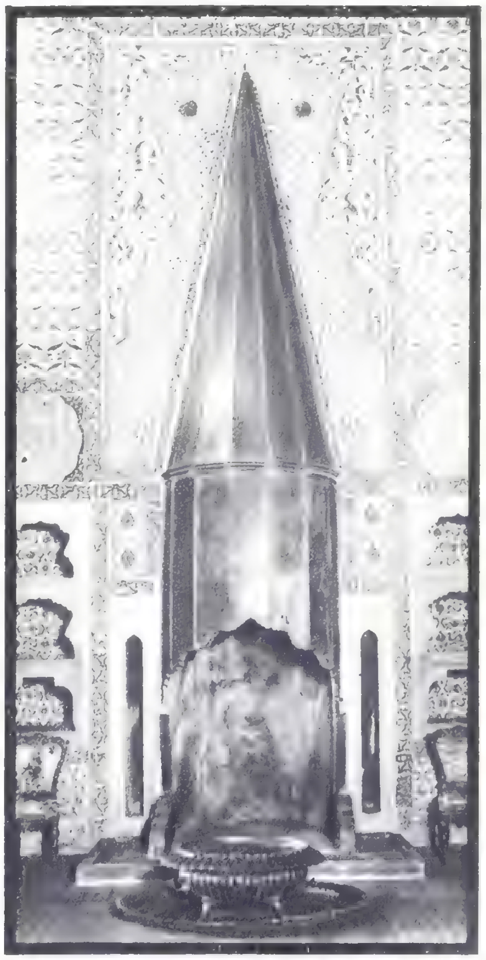


BANQUETING CHAMBER (DETAIL)



FIREPLACE OF MURAD III

To date Dr. Gunsberg has won only one victory, but it is indeed an impressive triumph: Greece has agreed to settle for various estates in Thessaly and elsewhere to the cheerful tune of $50,000,000. This is a handsome sum, most of whose beauty will appear when it is actually paid. To come as close to real money as this, however, is most encouraging to the morale of both Turkish principals and Anglo-Saxon promoters.

The great obstacle to success is a peculiar one: the disinclination of the courts to decide the question at all. Most judges are quite willing to decide practically anything, but the tribunals to which Dr. Gunsberg must take his case are notably coy about claiming jurisdiction. A Turko-Italian mixed tribunal, for instance, recently decided that it was "incompetent" to settle a $12,500,000 claim for certain of Abdul's lands and houses. One can well understand that even the judicial mind might hesitate to restore property confiscated in 1909. Dr. Gunsberg can only hope that the Turko-English tribunal scheduled shortly to begin hearings on $60,000,000 worth of claims will have more belief in its competency. But the Doctor does not place all his faith in tribunals. He is using his excellent dento-governmental contacts as a sort of diplomatic back entry to the case through which he can work while besieging the judicial front door. The most obstinate minister grows more amenable in a dentist's chair.

To the non-legal mind the recovery of property lost once in a national uprising and a second time after a war would seem out of the question. And so indeed it would be were it not that Abdul the Damned owned his estates *personally*, as a member of the Ottoman family, and not *politically*, as the Sultan of Turkey. The bed-rock question of property rights are at once involved, which means that every solid Forsyte in the "City" as well as every Babbitt in Zenith is in principle on the side of Bedrifelek and Mouchfika and against the governments of England, France, and Italy. The Ottoman claim, backed by much weightier considerations than a legal technicality, is thus a strong one, a fact attested to by the presence on the Turko-Italian tribunal of the eminent Signor Montana, one-time Italian Ambassador at Washington. The beauty of the whole case, from the point of view of the heirs, the Doctor, and the capitalists behind both, is the illimitable opportunities it offers. Theoretically, if their case is a good one, every last acre and every last diamond once owned by Abdul the Damned can be recovered. Practically, as a director of the Ægean Trust admits, "No one could collect $1,500,000,000 of any confiscated fortune." But that dazzling goal remains none the less on the far horizon, a golden fleece that brightly beckons to these strangely assorted latter-day Argonauts.

Meanwhile the nine wives and their sons and daughters live as best they can scattered through half the capitals of Europe. They do not live together, for each group is keenly jealous of the other. Said a harassed official of Ægean Trust, "Trying to prove titles and secure money is bad enough, but working with nine different widows of the same man and thirteen children is exceedingly trying. Much of our time is occupied attempting to keep peace in the family." The heirs range from the 300-pound princess who lives in Nice to the fanatic who will not leave the confines of Turkey because he considers himself head of Islam, and Commander of the Faithful, hence land-bound like the Pope. Prince Abdul Kadir seems to be the most energetic of them all. A year and a half ago

[*Continued on page 124*]

THE GREAT HALL OF STATE WHERE THE OTTOMANS HELD THEIR FAMILY COUNCILS

BURLINGA
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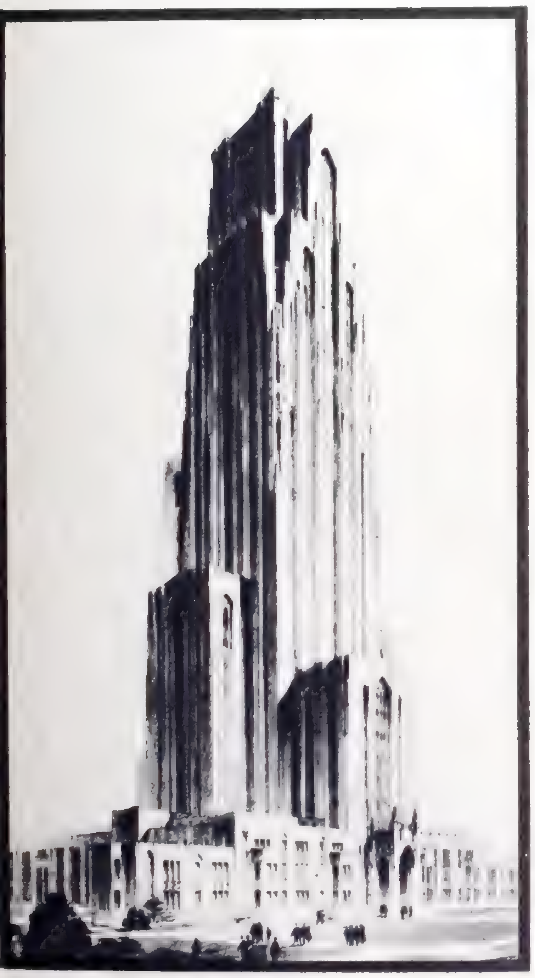
Stone & Webster

In 1885 meant a friendship; in 1930 means engineering, financing, and a dozen other things, but above all means public utilities and never more so than today.

ONCE there was a public utility company—not a very large one nor even a very prosperous one, but a very promising one. It needed a dam. It could have asked J. G. White & Co. or Ford, Bacon & Davis to build this, but it didn't. Then it needed to sell some bonds to pay for its dam. It could have asked National City Bank to sell these, but it didn't. Finally, it wanted to sell itself. It could have offered itself to Samuel Insull or to H. M. Byllesby & Co., but it didn't. It went to Stone & Webster, Inc. and asked that company, first, to build its dam, then to sell its bonds, and finally to become its owner. And all of these things Stone & Webster did.

Thus the root meaning of "Stone & Webster" is public utilities. This is not to say that other organizations do not also build, operate, and finance power and light companies: H. M. Byllesby has its engineers as well as its bond salesmen, nor does the far-flung Electric Bond & Share hesitate to build its own dams. But these companies are comparatively specialized. One thinks of them as holding companies or as engineers or as operators, each definitely established in its particular line. Stone & Webster is a Proteus that one does not quite know where to take hold of. Last spring, for instance, its entire center of gravity shifted and from a primarily engineering concern it transformed itself by a simple exchange of stock into a holding company that derives over two-thirds of its earnings from utilities. This veteran concern, which went into utilities when Westinghouse was still experimenting, handles every phase of the industry with equal ease.



LEARNING TOWER

To Stone & Webster came the University of Pittsburgh: how can we centralize our activities in *one* building? Result: this thirty-three story Tower of Learning now under construction.

When the Smithsonian Institute elected Charles Augustus Stone to its board of regents not long ago, the young La Follette arose in the Senate and successfully demanded that the election be rescinded, denouncing Mr. Stone as "a representative of the power trust" and terming Stone & Webster "one of the greatest power organizations in the U. S." Senator La Follette's first remark is as meaningless as it is banal, but his second observation is undeniably true. In the last twenty-five years Stone & Webster states it has completed more than $1,000,000,000 worth of construction for nearly 1,000 clients, among them such companies as Ford, General Motors, Westinghouse Electric, Union Carbide, and U. S. Rubber. It has examined and reported on properties worth over $7,000,000,000. The steam and hydroelectric plants it has built develop one-tenth of U. S. central station power and serve one-sixth of the country's population. It has an investment banking subsidiary that in the last three years has participated in some $1,200,000,000 worth of new security issues. Neither these issues nor the construction and appraisal work just referred to is confined to public utilities.

What makes Stone & Webster a potent factor in utilities is its control of Engineers Public Service Co., a holding company for six major groups of light, power, and street railway companies located in fourteen states and the West Indies, and serving, in all, 685 cities and towns. The total assets of Engineers Public Service are $355,000,000; Stone & Webster's total assets are $92,000,000. Yet this spring the latter swallowed the former. One reason this was no difficult feat was that Stone & Webster had long operated the properties grouped under Engineers Public Service, had, in fact, formed the company in 1925. The main reason, however, why Stone & Webster could absorb a company three times as large as itself comes down to a question of earning power. Since a company exists to make someone a profit, its potency is gauged not by any totaling up of assets but by a consideration of its ability to make money. From this point of view Stone & Webster, vigorous explorer and exploiter of profitable new utility fields, is by no means dwarfed by Engineers Public Service—as will be made clear later.

CHARLES AUGUSTUS STONE

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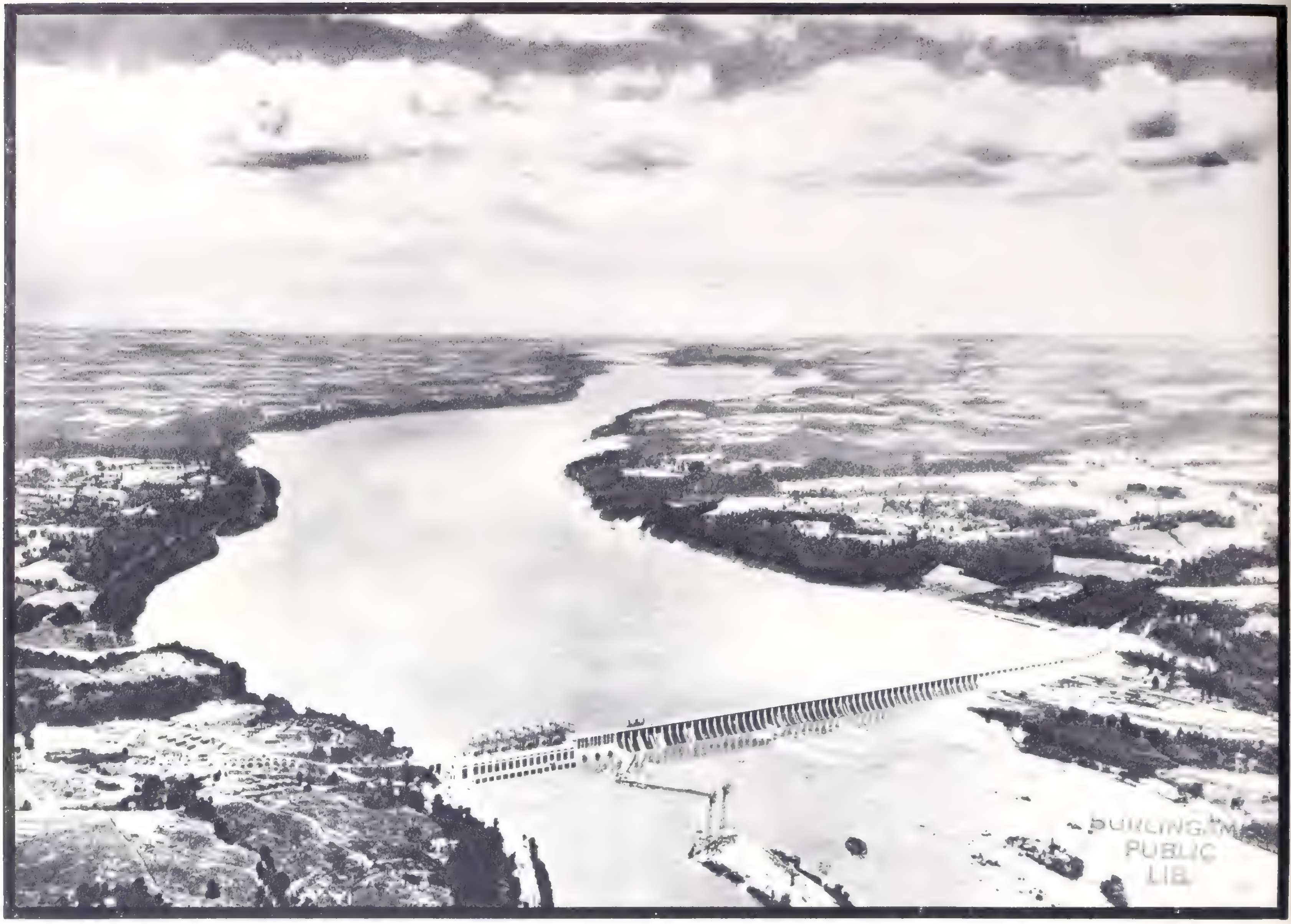
EDWIN SIBLEY WEBSTER



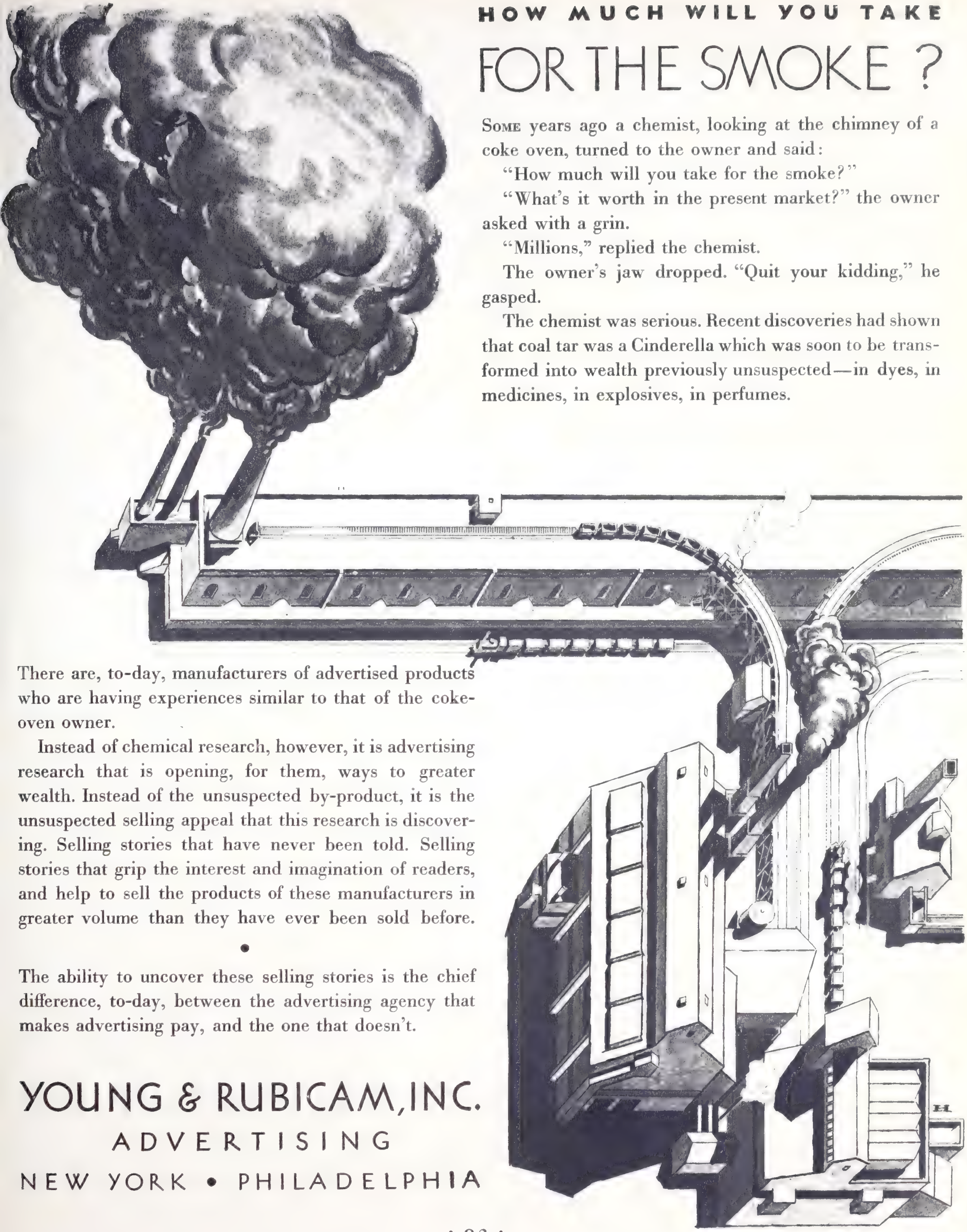
THE CONOWINGO HYDROELECTRIC DEVELOPMENT ON THE SUSQUEHANNA RIVER

In the path of the flood-swept Susquehanna River, which drains half of Pennsylvania, Stone & Webster has placed 700,000 cubic yards of poured concrete. About half the dam's length consists of a spillway for floods. The rest is a power factory with the biggest water wheels that have yet been built. From here power stalks on lofty high-tension poles seventy miles to Philadelphia, over lines that carry 220,000 volts. Conowingo took some 3,000 men a little over two years to build. It is the largest power development constructed at one step in the history of the industry, exceeding Muscle Shoals in total horsepower.

Prelude

In the late eighties Stone & Webster had no billion-dollar connotations to the mustachioed undergraduates of Massachusetts Institute of Technology. The phrase meant simply Charles Augustus Stone and Edwin Sibley Webster, a friendship as famed today as it was then. So close are the relations of the two that it is not easy to differentiate them. Both are New Englanders, both a little over sixty. Both have sons following after them in the company: Whitney Stone (Harvard, 1930) and Edwin S. Webster Jr. (Harvard, 1923). Both are in harness daily, Mr. Stone at his office on the thirty-seventh floor of Manhattan's Equitable Building and Mr. Webster in the floridly handsome Stone & Webster Building at 149 Federal Street, Boston. Mr. Stone takes his ease on his New Hampshire farm or on the Thomas Jefferson estate in Virginia, where he raises thoroughbred horses. Mr. Webster, who is very fond of shooting, spends his leisure hours out of doors, preferably on his estate in Massachusetts. In business matters the two act as one. Whenever Mr. Stone speaks of the company's activities, he says "Mr. Webster and I" or "Stone & Webster," never "I" alone. Had Mr. Stone not become head of American International Corp. just after the War, his desk might still remain beside Mr. Webster's in the Boston office. But once Mr. Stone went to New York, he stayed there, even after the work of American International Corp. was over. A good mixer (he belongs to twenty-three clubs), he was well fitted to guide Stone & Webster's expanding financial activities with their demand for a close contact with Wall Street. And so today Mr. Webster presides in Boston, where most of the engineering work is done, and Mr. Stone in New York keeps in touch with the financial world.

When Stone & Webster entered M. I. T., the great new force, electricity, was beginning to crackle in the air. Alert, Stone saw the immense possibilities and suggested to his friend that they major in a pioneer course in electrical engineering. Within a year after graduation each had borrowed $1,000 from his father and had set up in business together as consulting electrical engineers. Their first big job turned them into builders as well. Classic is the tale of how S. D. Warren, the paper-maker, came to call and was so much impressed by the steady click-click in the rear office of one of those expensive new-fangled "writing machines" that he gave the firm the contract. This job called for the construction of a high tension line nearly four miles long, which Stone & Webster accomplished, thereby demonstrating for the first time that alternating current could be transported sizable distances. Investigation after Mr. Warren had departed showed the writing machine to be Stone & Webster's lone employee industriously twisting the combination of the office safe. But by the time the panic of 1893 came along, the four-year old firm's reputation was already such that the elder Morgan engaged them to survey, appraise, and if possible sell a large number of utilities he had



HOW MUCH WILL YOU TAKE FOR THE SMOKE ?

SOME years ago a chemist, looking at the chimney of a coke oven, turned to the owner and said:

"How much will you take for the smoke?"

"What's it worth in the present market?" the owner asked with a grin.

"Millions," replied the chemist.

The owner's jaw dropped. "Quit your kidding," he gasped.

The chemist was serious. Recent discoveries had shown that coal tar was a Cinderella which was soon to be transformed into wealth previously unsuspected—in dyes, in medicines, in explosives, in perfumes.

There are, to-day, manufacturers of advertised products who are having experiences similar to that of the coke-oven owner.

Instead of chemical research, however, it is advertising research that is opening, for them, ways to greater wealth. Instead of the unsuspected by-product, it is the unsuspected selling appeal that this research is discovering. Selling stories that have never been told. Selling stories that grip the interest and imagination of readers, and help to sell the products of these manufacturers in greater volume than they have ever been sold before.

•

The ability to uncover these selling stories is the chief difference, to-day, between the advertising agency that makes advertising pay, and the one that doesn't.

YOUNG & RUBICAM, INC.
ADVERTISING
NEW YORK • PHILADELPHIA

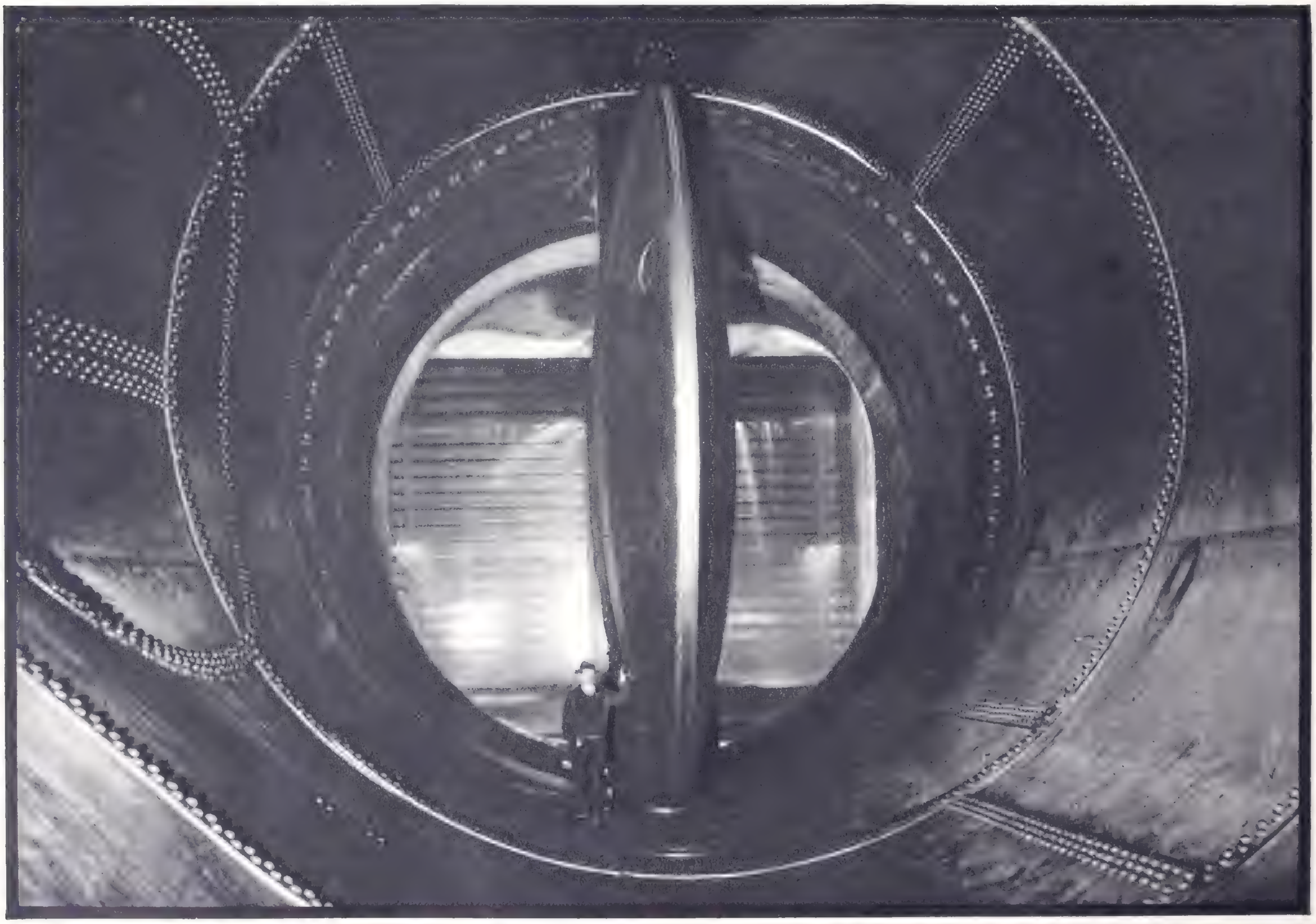
bought in at panic prices. He also offered them Cumberland Light & Power for their own account at $60,000. They borrowed $40,000, bought the company, and sold it within five years for $500,000. Stone & Webster was beginning to mean utility ownership as well as construction. Soon afterwards they formed Puget Sound Light & Power, the cornerstone of the $355,000,000 aggregation of utilities that makes up Engineers Public Service. By 1904 the definition of "Stone & Webster" had been extended to include the financing of companies and the sale of stocks and bonds.

Thus over twenty-five years ago Stone & Webster's activities were essentially as varied as they are today. On the other hand, Stone & Webster's corporate structure up to a year or two ago was nearly as simple as it was in 1889. The most amazing point about the last few decades of the company's history is not its tremendous expansion, for such is by no means unique in American business annals, but rather the fact that until very recently Stone & Webster has meant Mr. Stone and Mr. Webster and three or four partners and not so many dozens of capitalists and thousands of stockholders. Until 1920, in a word, Stone & Webster remained a firm, and even when it did change, it became a private corporation and remained so until 1929. "To us one of the most vital points in the upbuilding of our business," Mr. Webster once remarked, "has been the fact that we grew through handling our own money and our own properties. We did not gain our experience by risking some one else's money." It was not until July, 1929, that Stone & Webster became a public corporation. Up to that time every dollar in Stone & Webster's balance sheet came from that original $2,000 capital, without the aid of any sort of financing, private or public. When it finally determined on expansion, however, there were no halfway measures. Stock worth $57,500,000 was sold to the public, a move that more than doubled the company's resources. And a year later the doubled company quadrupled its size by absorbing Engineers Public Service.

Unlike Gaul, Stone & Webster is divided into six parts: Stone & Webster Engineering Corporation, which builds; Stone & Webster and Blodget, which finances; Stone & Webster Service Corporation, which operates; Stone & Webster Investing Corporation and Stone & Webster Associates Corporation, which invest; Engineers Public Service Company, which holds; and Stone & Webster, Inc., which controls all the rest. For the sake of clarity, a baker's dozen of lesser components (such as McClellan & Junkersfeld, Inc., Stone & Webster Construction Company, Stone & Webster Realty Co.) have been passed over. The functions of these six major parts can be reduced without too much violence to three verbs, into which let us now inquire. First, and simplest, is the forthright verb:

To build

The standing of Stone & Webster as builders may be gauged by one fact: with the building trades where they are today, the $100,000,000 of uncompleted construction work which Stone & Webster Engineering Corp. had on its books at the first of the



A BUTTERFLY VALVE AT CONOWINGO

A curiously poetical engineer it must have been who called this massive contrivance embedded deep in Conowingo's cement a "butterfly valve." For when this 136-ton butterfly's wing is closed, it withstands a water pressure of over 3,000,000 pounds. When it is open, it allows 180 tons of water per second to roar down on the mighty water wheel, which can produce as much power as 54,000 horses.

INGAME

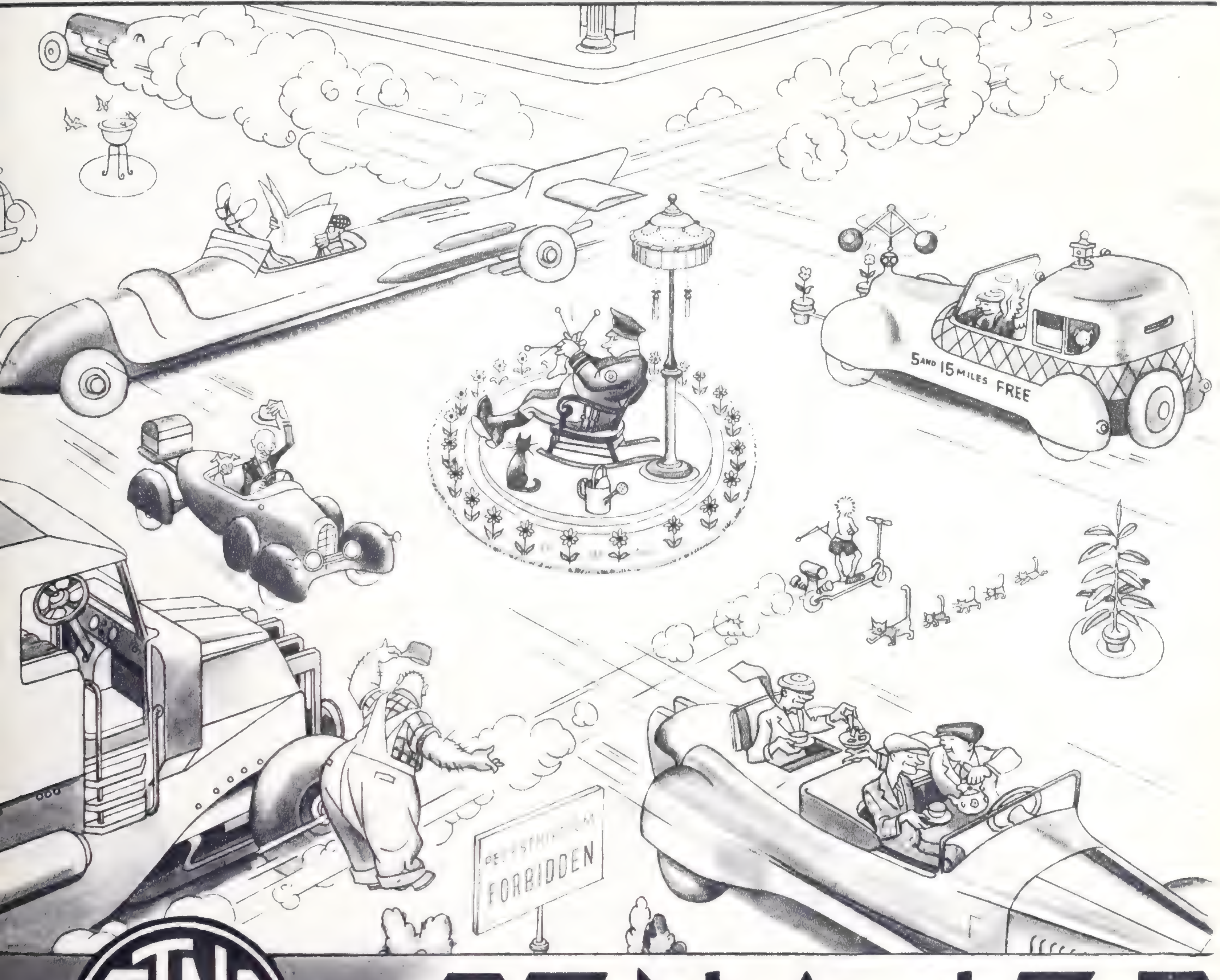
Until the Millennium!

SOME day traffic officers will have nothing more to ind than their own knitting! Some day the modern auto-obile will glide silently, swiftly, hither and yon, marvellously protected by undreamed of devices for comfort and safety. Some day the flaws in human nature will vanish as the morning dew before the rising sun. *Someday,* but... until the millenium—Ætna-ize!

oast to Coast Service Through 20,000 Ætna Agents

The Ætna Combination Automobile Insurance Policy otects you *all ways—always.* No matter where an accident ay occur or a claim develop—an Ætna representative is there look out for your interests. Ætna service now includes Europe, too. The Ætna-izer in your community will be glad to give you the whole story.

Ætna writes practically every form of Insurance and Fidelity and Surety Bonds! Ætna Casualty and Surety Company—Ætna Life Insurance Company—Automobile Insurance Company—Standard Fire Insurance Company of Hartford, Conn.



ÆTNA-IZE

SEE THE ÆTNA-IZER IN YOUR COMMUNITY—HE IS A MAN WORTH KNOWING year is not greatly reduced at present. The scope of Stone & Webster as builders would appear in a listing of these current contracts. They include factories, dams, office buildings, skyscrapers, power plants. There is a hydro-power development of 200,000 horsepower ultimate capacity under construction on the Columbia River in Washington, the Osage hydroelectric development of about 172,000 kilowatt capacity in Missouri, and the much-publicized skyscraper into which the University of Pittsburgh will eventually move its blackboards and professors. The potency of Stone & Webster as builders is revealed in these notes on some outstanding Stone & Webster jobs:

> Westinghouse Air Brakes' new plant, which was actually built around and over the old factory without interrupting manufacturing operations.
>
> The largest hard coal breaker in the world, recently built for Philadelphia & Reading Coal & Iron Co.
>
> The construction of the Hog Island shipyards during the War and the building of 120 "Emergency Fleet" ships in two years.
>
> The stately classical buildings along the Charles River of M. I. T., Stone and Webster's alma mater.
>
> The Southern California Edison's Long Beach Station No. 3, in which are installed the largest single shaft steam turbines ever constructed at that time; each has a capacity of 94,000 kilowatts.
>
> The Conowingo hydroelectric development on the Susquehanna, which is the largest power installation built at one step in the history of the industry. Its dam is nearly a mile long. The present capacity is 378,000 horsepower, its ultimate capacity approximately 600,000 horsepower.

CONOWINGO'S TRANSFORMERS

ATHENS GETS HER WATER FROM THIS DAM AT MARATHON

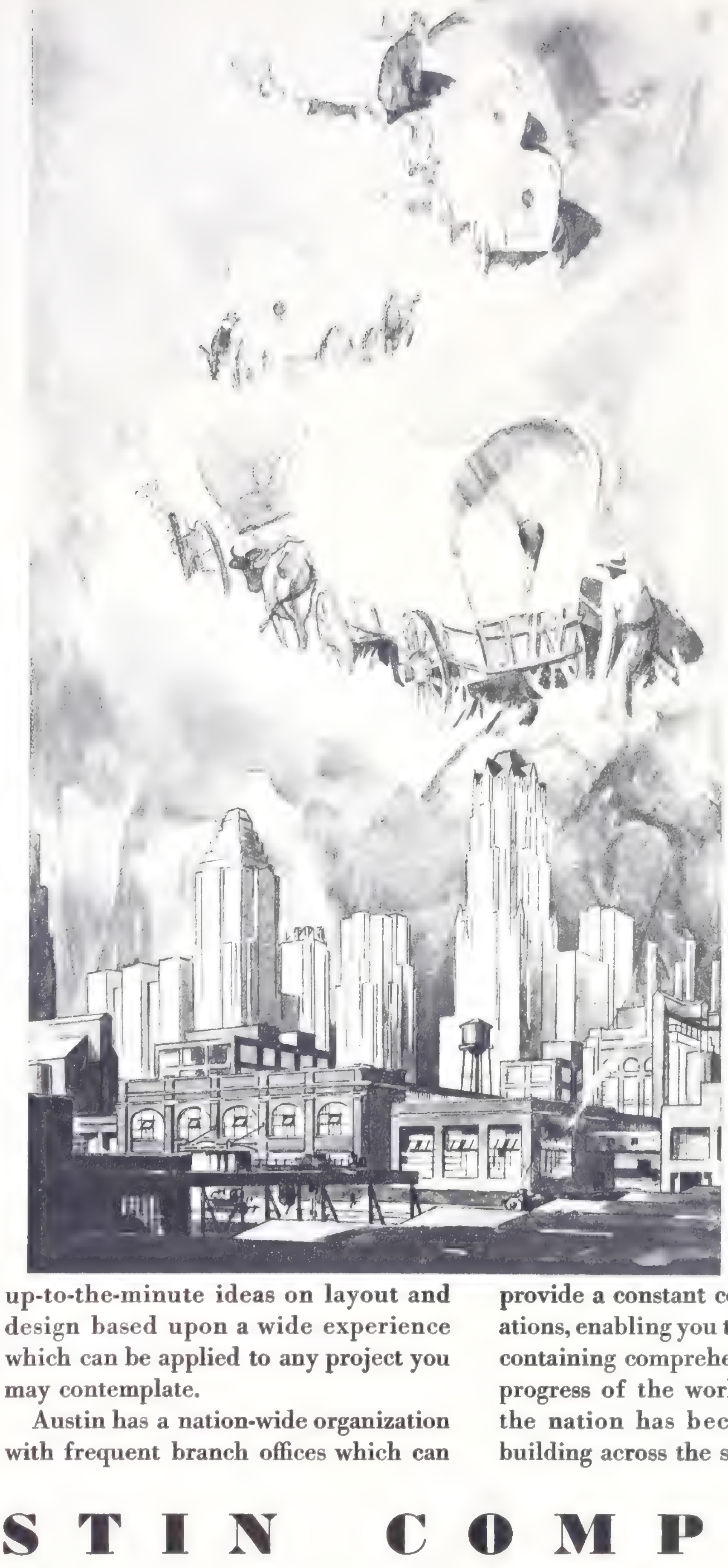
Faced with the same Pentelic marble used in the Parthenon, this handsome dam provides an adequate water supply to Athens for the first time in the city's 2,500-year existence. This year Athenians get 135 gallons per capita as against fourteen previously, when the city's water came via the aqueduct built by Hadrian. The dam was built by Ulen & Co., closely affiliated with Stone & Webster.

Most (about 75 per cent) of these and other Stone & Webster engineering projects are constructed for clients in no way connected with the company. A substantial, but not controlling, interest in Ulen & Co. extends Stone & Webster's construction activities to the ends of the earth.

To operate

It is doubtful if any company knows more about the technique of public utility operation than does Stone & Webster. It has been in the electrical engineering business longer without reorganization than General Electric, Westinghouse, or any of the other leaders in the field. It began its management service in the late nineties before any one else had thought of running other people's utilities for them. But it is not necessary to go to the past for evidence of Stone & Webster's skill in operating utilities. Stone & Webster Service Corp. today runs transportation, light, and power systems that serve a total of some 6,000,000 people. About half of this population is served by companies who are clients and not subsidiaries of Stone & Webster. They pay Stone & Webster Service Corp. a percentage of gross earnings to operate their properties for them. The other

TODAY, AS EVER, PRAIRIE SCHOONER MARKETS



Ian has always been the nomad. Poplations—markets—shift continually to ew locales, seek new economies . . . a narch that gains in the new world the picuresque symbol of the prairie schooner.

Those who make things to sell must ver consider these shifts of population, hese movements of markets and sources f raw materials. For if the present conomic tremors have swung plants out f "strategic center". . . where there is nicely established relationship between ransportation or raw materials, manuacturing and marketing, immediate teps should be taken to place new ranch plants or warehouses in the heart f the new distribution center.

Spotting your distribution map with ranches or warehouses can be readily nd swiftly accomplished . . . for the ustin-Method of construction enbles you to delegate completely the esponsibility for building operations, ither in or away from your home city.

Austin Engineers bring you the most up-to-the-minute ideas on layout and design based upon a wide experience which can be applied to any project you may contemplate.

Austin has a nation-wide organization with frequent branch offices which can provide a constant contact in such operations, enabling you to have daily reports containing comprehensive details of the progress of the work. Building across the nation has become as simple as building across the street.

THE AUSTIN COMPANY

THE AUSTIN METHOD

The Austin Method of Undivided Responsibility

Architecture, engineering, construction and equipment . . . separate responsibilities ordinarily . . . become one integral service, a single responsibility under the Austin Method. One nation-wide organization handles the complete project under one contract which specifically guarantees in advance total cost, time of completion with bonus and penalty clause if desired; and high quality of materials and workmanship.

ARCHITECTURE · ENGINEERING · CONSTRUCTION . . . CLEVELAND

3,000,000 people are customers of the companies whose stocks are held by Engineers Public Service Company. Most of these properties, as Puget Sound Power & Light, which grosses over $16,000,000 a year, have been under Stone & Webster management for many years.

There is plenty of evidence as to the competency of this management. For the first half year of 1930, the companies managed, both those in Engineers Public Service and the independents, showed an 8.3 per cent increase in merchandise sales over the same period of 1929. Engineers itself has been gaining steadily this year over last, with $7,075,000 net for the year ended June 30, 1930, as against last year's $5,481,000. This gain must be somewhat discounted, however, inasmuch as abnormal drought conditions crippled Puget Sound Power & Light operations last year. Most coveted of all honors by public utility companies are the two Charles A. Coffin gold medals. In 1928 Puget Sound Power & Light won the power and light medal, and another Engineers Public Service subsidiary, Virginia Electric & Power Co., won the transportation medal. In 1929 another subsidiary, El Paso Electric, won the light and power award, and Puget Sound won the Forbes Public Service Cup, becoming the first company to win both the Forbes and the Coffin awards.

To finance

Three years ago two old investment houses, Stone & Webster's security division, founded in 1904, and Blodget & Co., founded in 1886, joined forces in a merger. To date the three-year old house of Stone & Webster and Blodget has participated in the underwriting of $1,200,000,000 worth of securities, stood seventeenth (next to Bonbright & Co.) among the 122 investment houses whose names appeared in new offerings totaling $50,000,000 or more during the first half of the year. By no means is all this activity limited to utilities. Stone & Webster and Blodget took a prominent part in syndicates that sold issues of Anchor Cap, Canadian National Railways, Caterpillar Tractor, General Stockyards, and many another industrial company. The venerable Railway & Light Securities Co., established in 1904 and one of the oldest management-type investment trusts, was formed by Stone & Webster. Stone & Webster and Blodget was at the head of the syndicate that financed Marine Midland Corp., important combination of sixteen upstate banks in New York.

To a company like Stone & Webster, investing is as essential as selling. Neither a holding company nor an engineering company needs to sink much capital in plant or equipment, and yet both are likely to show good earnings. Hence the investing of surplus capital becomes of the first importance. This vital function is carried on by Stone & Webster Associates Corp., headed by Mr. Stone himself, and by Stone & Webster Investing Corp., headed by young Edwin S. Webster Jr. These companies push out the channels through which runs the capital that is constantly flowing into the parent company.

[*Continued on page 121*]

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A STONE & WEBSTER DAM ON BAKER RIVER, WASHINGTON

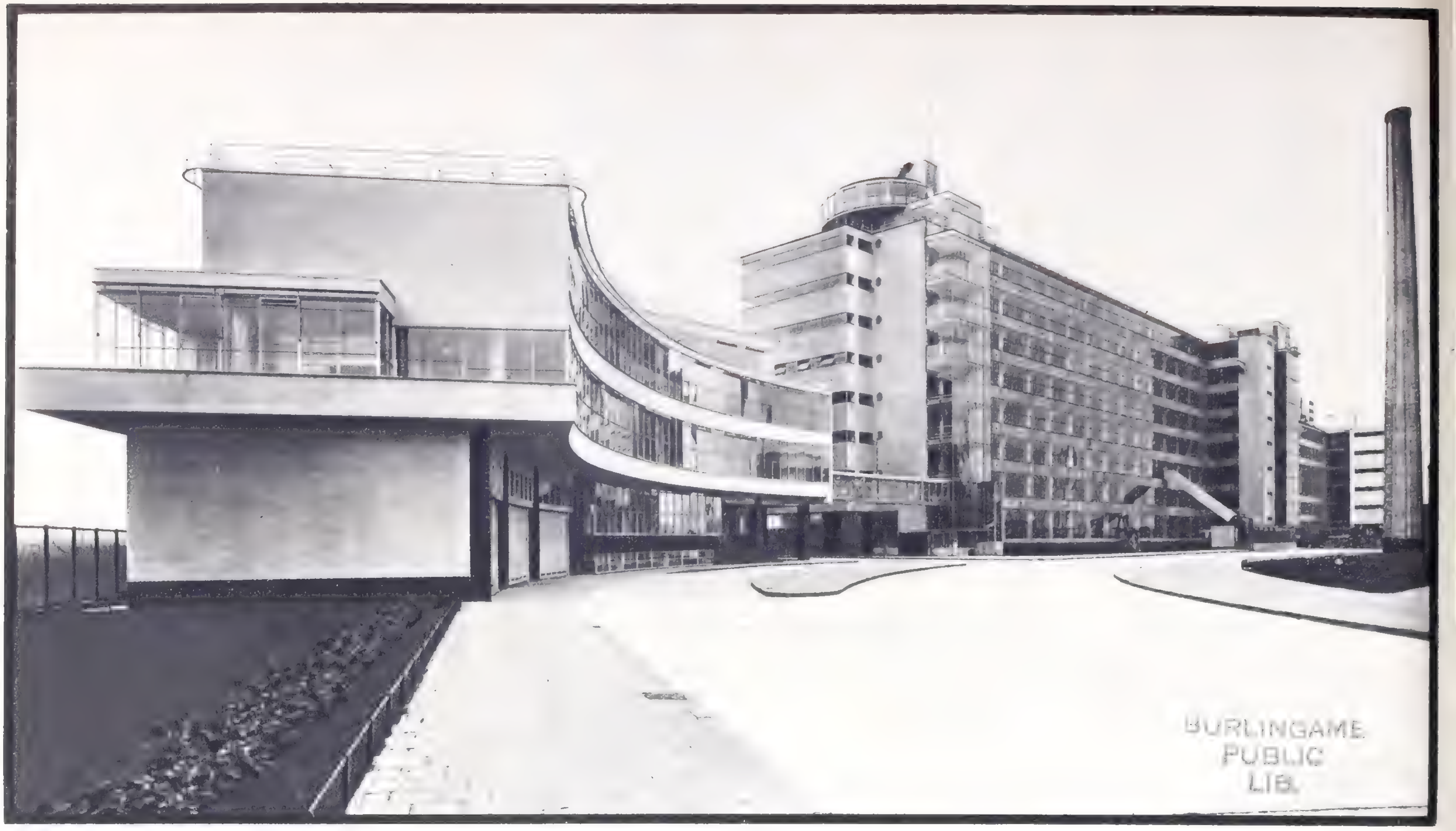
The FIRST
NATIONAL BANK *of*
BOSTON

★

If you have or contemplate business operations in New England *it will be to your advantage to consult* New England's *largest financial institution* THE FIRST NATIONAL BANK *of* BOSTON

★ ★ ★ ★

Affiliated Institutions: Trust Service, OLD COLONY TRUST COMPANY
Investments, The FIRST NATIONAL OLD COLONY CORPORATION



BURLINGAME
PUBLIC
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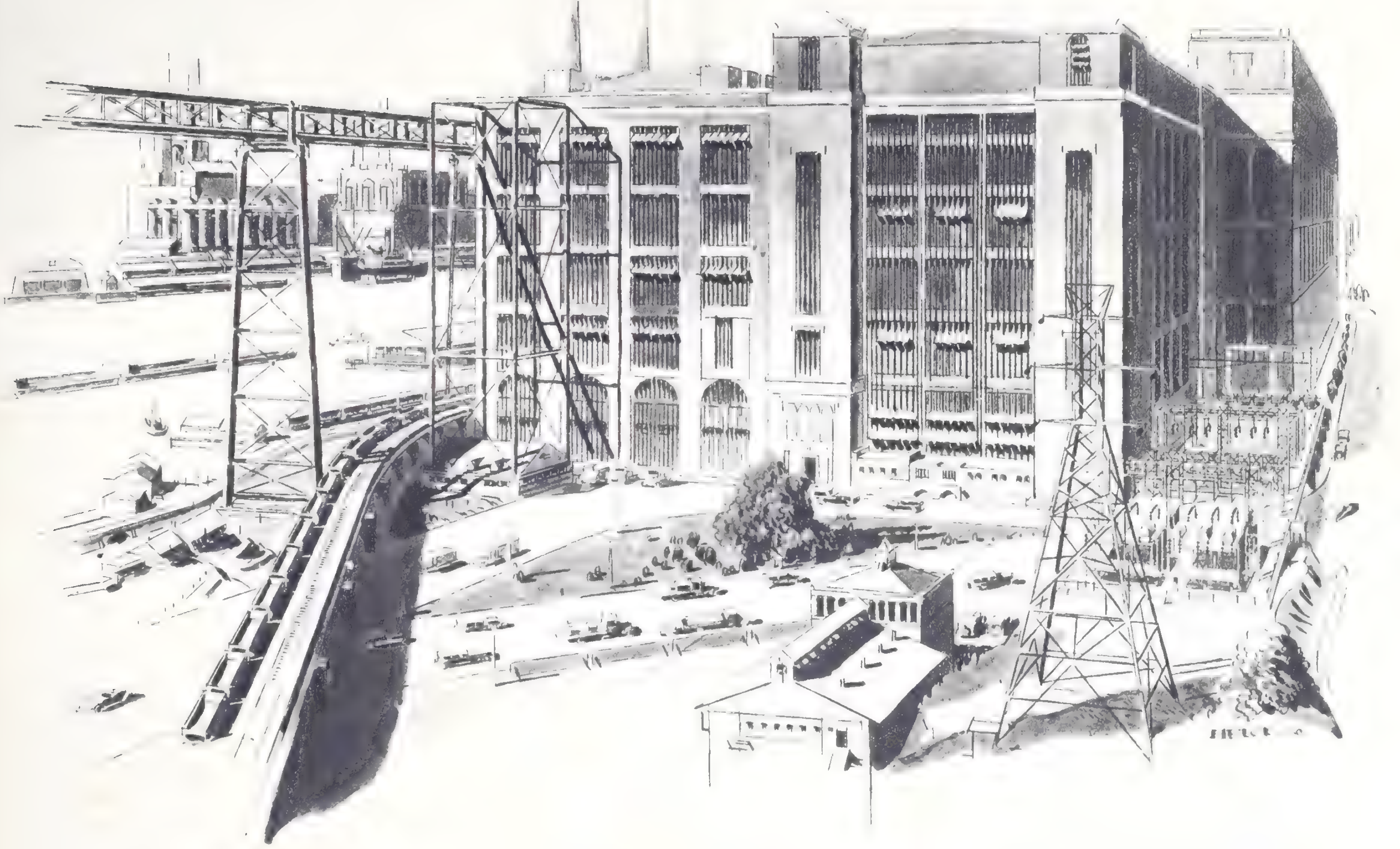
Photos from Cleome Carroll

Tobacco, tea, coffee

IN MATTERS of tulips and ultra-modern architecture, it is hard to beat the Dutch. We are here concerned with architecture. Not even France, with its great practitioner and greater theorist, Le Corbusier, surpasses Holland in the erection of buildings conceived with regard to modern ways of living and working. Old Amsterdam and Old Rotterdam are full of new sights; the Dutch wing of the new school of architecture is perhaps the most important and exciting in the world. Among its names are J. J. P. Oud, Rietveld, Mart Stam, Bijvoet & Duiker, L. C. van der Vlugt & J. A. Brinkman. The last-named pair, collaborating with the brilliant young Mart Stam, conceived the van Nelle tobacco, tea, and coffee-roasting factory of Rotterdam, pictures of which appear on this page. In it the qualities of space, light, strength, and convenience are apparent in plastic form. Ugly shapes and muddy, depressing colors do not exist. Bright blue, lemon yellow, and jade green figure in the conference rooms; even the light, restfully tinted working quarters have vivid streaks of pipe-line. All furniture and equipment is of steel; there is not an iota of wood in the entire plant. The extensive use of glass and concrete is apparent in the photographs. An electric signal system helps intramural communication by indicating at any time the whereabouts of every official in the factory. The circular conning tower atop the main building is a blue and silver reception room where van Nelle beverages are dispensed to visitors. C. H. van der Leeuw, van Nelle partner, lives in a van der Vlugt & Brinkman house (switch buttons regulate the windows, deodorize the dining room). Of the van Nelle factory he says: ". . . judging from the opinion of the workers and of the managers as well as from the criticisms of visitors . . . the interaction of the following three driving forces—the human rights of the workers; the technical needs of the machinery; and the striving of the architect after harmony both in the interior and the exterior of the building, results in mutual benefit. 'Functional building' has won its case against 'façade building.' "

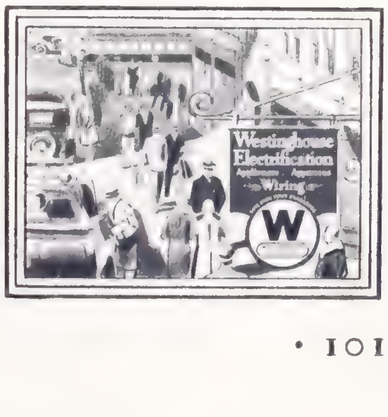
ELECTRIC POWER
BUILDS BUYING POWER

. . . wherever you live



ELECTRICITY today enables the manufacturer to give you better goods for less money than ever before. His dollars—and yours—now go farther because of the time and labor saved by electric motors, heating and transportation—by electrified handling of material. The luxuries of our grandfathers have become the everyday necessities of modern life.

Homes everywhere are brighter, cleaner, more pleasant to live in today—yet hours of freedom have replaced the hours of back-breaking toil which were formerly the price of a well-kept home. Just as electricity has extended the family budget to cover a wider range of necessities, so it is constantly providing new appliances to lighten our daily tasks and free us for the enjoyment of our new living standards.



From the time electricity was first made available for widespread application, Westinghouse has cooperated in every phase of electrical development. From machines that produce power, to appliances that serve in home, store, factory, mine, theater, transportation system or on farms, Westinghouse is producing equipment which helps electricity give you more for what you spend.

Tune in the Westinghouse Salute over WJZ and the coast-to-coast network, every Tuesday evening.

Westinghouse

Danger at the A. O. Smith Corporation

[*Continued from page 67*]

velop competing processes. In small-diameter pipe, competition has long been hot and heavy between the several large producers. Now the electrically welded pipe monopoly of A. O. Smith (for a time, they were largest American steel users) has been challenged by Steel's subsidiary, National Tube, which has fought hard and fairly successfully to improve the old seamless pipe to meet A. O. Smith pioneering and which last summer began to produce electrically welded tube. Youngstown Sheet & Tube is now installing equipment for a process of its own; Republic has just completed a $10,000,000 plant to make electrically welded tube in sizes from eight to sixteen inches. They started and had in operation in 1929 one electric weld plant making pipe four inches to eight inches in size. Not yet, however, has any steel company actually broken A. O. Smith's hold on the big (sixteen to twenty-four inch) electrically welded pipe market. And two years ago Mr. Smith turned his laboratory hounds loose to develop a way of making pipe which would antiquate his competitors' ways before they got fairly started. Behind one high wall in the plant I was not permitted to go. Have the hounds run down the quarry? I do not know. But nobody in the organization seemed particularly worried.

One last field observation before we move to general principles. In a rambling wing I found the very efficient safety department and the department of preventive medicine equipped for as complete a physical examination as the best hospital can give. This is said to be the most thorough-going medical study of *normal* persons ever conducted. As the records grow and the years go by, it will be profoundly helpful in telling the well person what he must do to keep well . . . There are scientists of steel in this company and scientists of flesh and blood.

The Smith dynasty has a guiding star. It employs seven salesmen—I counted them—and not far from 600 engineers. Presently the new research building will house 1,000 engineers in quarters equipped with facilities beyond their wildest dreams. Their work is not primarily to keep the present output increasingly efficient, but to develop new varieties of output, and totally new processes for fabricating them. A program of industrial depth bombs, but geared to three basic principles:

I.—The product must lie in the field of mass production, with an established market, or one which the economic research staff knows can be established.

II.—A product to be made so much better and cheaper than anything else in the field that it will sell itself on its engineering merits alone, with no outlays for high pressure salesmanship or advertising.

III.—A product profitable enough to liquidate its fixed investment in not longer than a year or two. (The success of this principle hitherto is reflected in the company's luxuriant profit and loss accounts. I speak as a sometime C.P.A.).

The product having been determined according to these principles, it is put through three stages, or stations as Mr. Smith calls them. First comes the "pencil sketch" station. It may die there. But if the figures look sound, it goes to the "test tube" station, of laboratory analysis. If it survives this manhandling, it goes to the "pilot plant" station—a miniature factory where it is actually produced under normal operating conditions, and its performance, and particularly its costs per unit, accurately determined. The pilot plant answers the question: can it be made in the expected quantities at the calculated costs and how big must the real operating plant be? This delimits the design of the proposed plant and makes its construction practically automatic, with everything accounted for in advance. If the answer is in the negative, whatever the time and money spent upon the idea, it goes down the trap door. "I can get out of a business faster than anyone in the country," says Mr. Smith—an art which few executives have learned.

Lloyd Raymond Smith comes honestly by his face, his trade, and his name. Steelmen were his father and his father's brothers, and these were in turn the sons of a steelman. Not far from the A. O. Smith plant is another monument built by this family—the Geo. H. Smith Steel Casting Co. Altogether the Smiths have played a large part in Milwaukee's life. Lloyd Raymond Smith has always lived there in a big, comfortable house at 410 Terrace Avenue, has raised six children there (the eldest living is eleven; the youngest, ten weeks), and has added to the city's wealth a fortune whose size can be measured only by the value of the business he directs and largely owns. So swift has been the company's recent rise (net income, year ended July 31, 1928—$2,833,700; 1930—$5,500,000) that its value almost defies calculation. He has never dissipated the great force of his concentration upon this enterprise by accepting scattered directorships.

Certain by-products of profound industrial significance arise from this program. The production of a given article under these principles of engineering research, automatic fabrication, low costs, tends to insure high quality. If the mill is not to jam, every incoming piece of raw material—as we saw in the frame plant—must pass rigid tests of inspection. The delicate controls demand an absolutely uniform product, without flaw or break. Engineering and its handmaiden, mathematics, are sciences to which the word "elegance" has been frequently applied. In full control of the job, other things being equal, the output will share that perfection and that elegance. Mr. Lewis Mumford, the distinguished architectural critic, has been hinting at this for a long time. I am glad to supply him with concrete evidence of the soundness of his stand.

A second philosophical by-product—and not so exclusively philosophical either—is the factor of obsolescence. The Smith policy is ruthlessly to scrap anything which is not a jump or two ahead of the rest of the world; to scrap indeed when it *is* ahead, if the research staff has developed a better process. Certain great corporations buy up, or develop, improvements and file them in their safes. Mr. Smith puts them to work instanter; ground for the new plant is broken before the signature of the patent office is dry. "I grant it is wasteful, I grant the overhead cost is enormous, but it is far more wasteful to burn up men and materials in the old way when a better way has been found."

It all boils down, of course, to the margin of economy in the new way. If the margin is demonstrably greater than the cost of installing the method, it is cheaper to the company and to society to scrap the old; aye, to throw uncounted millions of investment on the dump heap. The only trouble is in locating the marginal point. Aging boards of corporate directors have some difficulty in the premises, but to a stripped, flexible organization with every executive ready to go through hell and out again with Mr. Smith, and 1,000 engineers supplying the facts, the point is easier to determine. Nine times out of ten an organization like this will succeed, where the ordinary manufacturer, regarding engineers as so many expensive plumbers, will fail if he attempts to flirt with the ballistics of obsolescence. "How can you afford to spend so much for engineers?" these gentlemen ask our hero. "I can't afford not to," says a lean, brown man in the upper forties, with a face like a Yankee skipper's.

Dangerous Milwaukee

I regard Milwaukee as the most dangerous area in the U. S. It promises, in the persons of the Smith dynasty, to deal American industry a wallop beside which the late stock market crash was a chuck under the chin. Any determined adoption of its principles will turn the economic structure upside down and inside out, scrap billions of dollars of investment, shatter the nerves of untold bankers, and set the exalted profession of high-pressure salesmanship in a roadside ditch.

But when the hurricane is over, we may find a world where poverty has disappeared, where robots are unheard of, where working hours have been cut in two, where waste is at a minimum, and where the era of the salesman has given way to the era of the engineer.

4 INCHES OF STEEL

On this Refrigerator you will find a simple 4″ name-plate on which there is engraved the name and monogram of *General Electric.*

- "A penny strip of metal" the junk man would call it.
- "A tiny touch of trim" in the eyes of the flapper.
- "Four inches of Steel" to the laborer and mechanic.
- "A sacred symbol of good faith" to the manufacturer who fashioned it.

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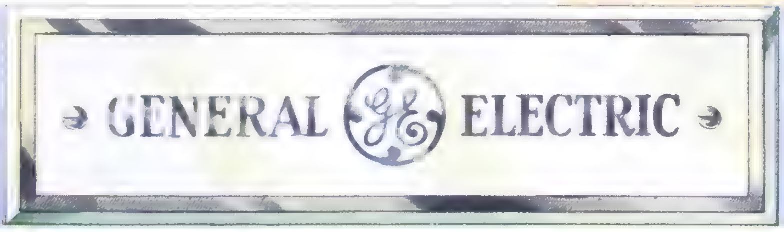
ND TO *YOU*—A PLEDGE—A SOLEMN PROMISE HICH SAYS "THIS REFRIGERATOR WILL SERVE OU FAITHFULLY THROUGH THE YEARS TO OME. IT IS A PRODUCT DESIGNED AND BUILT —AND GUARANTEED—BY GENERAL ELECTRIC!"



Weight comes down— profits go up

Lightening your products makes them less costly to move; whether they are collapsible tubes, machine parts or railway cars; whether they move in a 5 inch arc, or travel a thousand miles.

The use of the light, strong Alloys of Alcoa Aluminum eliminates needless weight—converts into profit money that otherwise must be spent for operating, shipping or labor charges. Because buyers want products strong, but light, manufacturers who shave dead-weight by a generous use of Alcoa Aluminum find their products in greater demand—their profits increased.

Uniting strength with extreme light weight, attractive appearance, greater heat conductivity and non-corrodible features, the light, strong Alloys of Alcoa Aluminum have given industry a new material to work with. These Alloys are now being used in hundreds of different ways, effecting as many economies.

Research in Aluminum Company of America Laboratories is constantly developing new uses for the light, strong Alloys of Alcoa Aluminum. Our nearest office will gladly supply you with information on the application of Alcoa Aluminum to your present or anticipated needs. ALUMINUM COMPANY *of* AMERICA; 2402 Oliver Building, PITTSBURGH, PENNSYLVANIA.

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ALCOA ALUMINUM

ALL THE NEEDED STRENGTH
LESS THAN HALF THE WEIGHT

Skyscrapers: Life on the Vertical

[Continued from page 80]

rns back. When it shows red, the car is
nning behind and must by-pass its signals
d catch up. If a car falls far behind, the
arter intervenes to send it off empty or
herwise restore the rhythm of his bank.

Cars are always built for the particular job.
tis and Westinghouse build some of their
vn but depend for their special orders upon
e Tyler Company of Cleveland, as do al-
ost all other manufacturers. Tyler built the
rs for the Daily News Building, the Chase
ational, Bamberger's, the New York Cen-
al Building, the Chanin Building, the Chrysler Building, the Manhattan Company Building, the Foshay Tower in Minneapolis, the General Motors Building in Detroit, the Lefcourt Building in Chicago, the Bush Terminal in London, the Mitsukoshi Building in Tokyo. The practice of the company is to work from the beginning of the project with the architect and the owner, making plans, color schemes, models, etc. Tyler has made round elevators of bronze fretwork for jewelers, padded elevators for clubs, futuristic cars for automobile millionaires, delicatessen cars for department stores, Renaissance cars for apartments. Sometimes, as in the Chrysler Building, there will be five different designs among thirty elevators. Everything, from ventilators to wall pattern, is built to order for the particular customer. Doors are manufactured by companies specializing in such apparatus as, for example, the Dahlstrom Door Company, which has furnished doors for the Empire State Building and the News Building in New York and many other important buildings of recent construction. And the cars are correspondingly expensive. A few years ago $1,000 was considered high for a car alone. Today the price may reach $5,000. Many cars cost $2,500, and the Fisher Brothers elevators in Detroit were simple and magnificent enough to cost $5,000. A complete installation costs from $20,000 to $40,000.

The range of choice extends from the Otis Company, manufacturers of 65 per cent of American elevators and 55 per cent of the world's supply, through Westinghouse, a new but extremely successful elevator builder, to General Electric with its wide connections among the smaller companies (of which Gurney is the best-known example), and A.B.See with its philosophically minded president.

Since some 5,000 architects constitute the American market for elevators, it is more important to an elevator manufacturer to be reliable than to be famous. And the importance of the industry cannot in consequence be measured by its advertising. The fact is that no American product has made more spectacular technical and esthetic advance in the last generation than the vertical express.

OTIS ELEVATOR COMPANY

ONE hundred shares of common stock in the Otis Elevator Company, bought for $10,700 in 1920, would have become 470 shares worth about $211,500 at the high price in the summer of 1929. And the 470 shares would have become 1,880 shares worth about $122,200 at prices prevailing in the summer of 1930. The increase in value is explained *inter alia* by the rise of the net income of the company from $2,880,277 in 1920 to $5,649,034 in 1927, $7,343,893 in 1928, and $8,370,528 in 1929. Although business fell off somewhat in the first half of 1930, earnings increased by about 4 per cent in the first quarter.

The company is the successor of Otis Brothers & Company which was, in turn, the legatee of the inventions and the business of Elisha Graves Otis, who invented the first safe elevator in 1852. It owes its existence in its present form to William Delavan Baldwin, its late chairman, who, in 1898, brought about an amalgamation of Otis Brothers with various other small manufacturers and who has since extended its activities until it now operates associated companies in Argentina, Australia, Belgium, Brazil, the British Isles, Canada, Chile, Cuba, Egypt, France, Germany, Italy, Japan, Mexico, New Zealand, South Africa, Switzerland, and Uruguay, maintains agents in twenty-two other foreign countries, and operates seven factories and 180 branches in this country. Its capitalization consists of 65,000 shares of 6 per cent, $100 par, preferred stock, and 2,000,000 shares of common of no par value. The company has not passed a common dividend for twenty-six years and has never passed a preferred dividend.

Mr. Baldwin had been in the elevator business since he was twenty-six years old. At the time of his death, last month, he was seventy-four, an active resident of Westchester County, an amateur fruit-grower, and a professional trans-Atlantician, having crossed that body of water some sixty times. His directors included F. W. Allen, Thomas L. Chadbourne, C. D. Hilles, W. W. Miller, E. V. R. Thayer, and Albert H. Wiggin.

Jericho Turnpike

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[Continued from page 54]

natives in its field than in the others. And for the same reason, it is difficult to classify Warrenton as either Infra-Blue or Half & Half; on the one hand it has Jim Maddux and on the other Mrs. Winmill's zebra.

Rich Piedmont

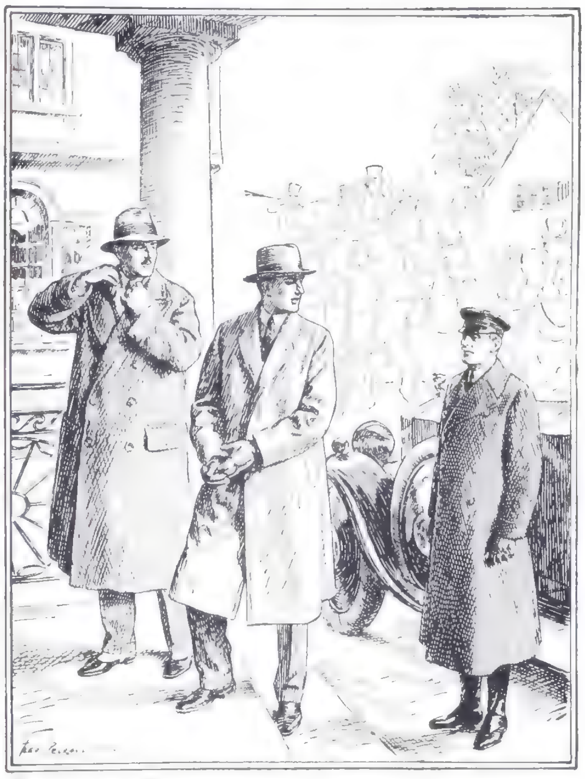
About the Piedmont, however, there is no doubt. So vociferously does the Piedmont claim to be pure Virginia that it is conspicuously Half & Half. Give ear, if you wish, to its arguments: oldest of the recognized hunts (founded in 1870), most legended (i.e., its pack once chased a fox with two brushes, an event commemorated by the mask and crossed brushes on its hunt buttons), one of the few native-born M. F. H.'s (Waugh Glascock), and complete reorganization last year with all aliens ostentatiously excluded (Dr. Archibald Cary Randolph made president). But hearken, also, to the other side: the old Piedmont, the one founded in 1870, died of anemia; the present Piedmont, you remember, is one of HWS' incubator babies; non-Virginians were weeded out last year, yes, but many of the Virginia-rooted Dulanys were born in Washington and now live there; and most important of all, the Piedmont is so rich that it is alien in interest if not in heritage. Here, for instance, hunt the Jock Whitneys; she, until recently, Liz Altemus of Philadelphia; he, only son of the late multimultimillionaire Payne Whitney. For his bride, Jock Whitney bought "Llangollan" and shingled the servants' quarters with timber cut on the estate, but the shingles weren't seasoned first and the drought came and the shingles curled and the county grinned good-naturedly, for the Jock Whitneys are popular. But for all Northern Jock Whitney and Marshall Field, the Piedmont has, in all truth, a vast majority of Virginians and its native Virginian M. F. H. is a very real and undeniable treasure.

Ceremonious Keswick

About the same proportions are found in the Keswick, well down in the red clay country around Charlottesville (University of Virginia). Ed Tayloe, president of the Keswick, is a Virginian of Virginia. His house, "Edgehill," built by Thomas Jefferson and framed in venerable box, is laden with trophies of the Tayloe horses from two centuries back: one, a magnificent platter was won by *Calypso* at the Virginia Jockey Club races on December 6, 1796. A hundred years, less a day, later, the Keswick was founded. Cary Ruffin Randolph was president, and John Armstrong Chanler of "Merry Mills" M. F. H. This highly original character is noted for many things, among them his habit of sleeping in leather pyjamas and an almost exclusive predilection for duck and ice cream. Subsequent masters of the Keswick have been Hugh C. Dodd (English), Julian

ESTABLISHED 1818.

Brooks Brothers,
CLOTHING,
Gentlemen's Furnishing Goods,
MADISON AVENUE COR. FORTY-FOURTH STREET
NEW YORK



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1818 AND TO-DAY

Business Suits
Overcoats
Liveries

Send for "A Wardrobe for BUSINESS"

BRANCH STORES
BOSTON
NEWBURY CORNER OF BERKELEY STREET
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Morris (near-greatest of horse-show judges), and J. C. Stewart of Sewickley, Pennsylvania. Under Morris, the Keswick Hunt team crossed to England in 1906 and challenged all comers at the International Show (Olympia). Keswick won.

Only of late has the Keswick's pristine purity of Virginia and English members been diluted to the Piedmont's proportions; surprisingly, mysteriously, Charlottesville has recently had a large influx of retired tycoons, not all of them as pleasant and welcome as W. B. Bogert, ex-member of Chicago's Board of Trade. Adding to this tension are the occasional raids of outlaw packs. Nonetheless, the Keswick hunts cheerily on, secure in its Virginia traditions and ceremonies. (Last year, the Keswick borrowed a ceremony from the Duchesse d'Uzes when young Rev. Robinson, English rector of little Grace Church, blessed the pack before a meet, his face shining with delight and excitement. A parallel Irish ceremony: at the funeral of George Leake of Rathkeale Abbey in 1843, members of the hunt were there in scarlet, and the hounds had crêpe bows tied under their necks.)

British Albemarle

Properly, the Albemarle (next door to the Keswick) should be as Virginian as pride, despite and because of its English joint masters: Algy Craven, whose father was master of the famous Pytchley, and Ronald Tree, grandson of Marshall Field, son of Lady Beatty, husband of Langhorne-kin Nancy Perkins. Though Tree spends most of his time in England (he is M. F. H. of the Pytchley now), he frequently returns to hunt with his beloved Albemarle and lives in "Mirador," the old Langhorne home, whence hunted Lady Astor, dashingly and well. Yes, the Albemarle should be Virginian (for nothing is more Virginian than an Englishman); it can claim seventy-five years of history if it wishes; it boasts no international uniform but Melton (secretly, Confederate) gray; and it scampers with true Cavalier abandon over hard and fast countryside with formidable four and four and one-half foot fences. The Albemarle *should* be Virginian, but it falls short of this perfection; aliens have come in—nice aliens, welcome aliens, popular aliens, but *aliens*.

One is harmlessly gruff Horace Hutchins, ex-Chicagoan and secretary of the hunt. Another is Randolph Ortman, no hunter himself, but breeder and exhibitor of good hunters (chipper, faultless Jack Carpenter rides for him). Ortman is sponsor of an excellent horse show and financial angel of the Albemarle. And there are still others: nice, welcome, popular, but technically aliens, no less. So the Albemarle is not Virginian, though it still looks down its English aristocratic nose at nouveau Orange County, Middleburg, Warrenton.

Purist Casanova

No, for a clean-bred Virginia hunt you must turn, deaf to the siren call of the Piedmont, to the Casanova. Though young (*née* 1909), the Casanova has character, much of which derives from its M. F. H., Miss Charlotte St. G. Nourse. A portrait of this very gallant lady would do interesting things to her *mèche blanche*—that single lock of gray hair; it would exploit, too, her wide forehead and square jaw; but it could not capture her voice: rich, tired, tense—a voice that cannot speak of horses, dogs, and hunting without a confessional tremor.

For that, there are few more than ten dogs (a scant five couples) that she can speak of. One of them, *Bob*, had his tail cut off by a railroad train. But hunted by this lady, a descendant of that Robert Morris who "killed five fox before breakfast," her ten hounds (*Bob* included) will lead you as desperate a chase as ever you will find—partly because the Casanova's country is fast, partly because its fields are small, and partly because the hounds hunt from hunger, not merely as an interlude to kennel life.

"Hounds hunt from hunger?" Certainly. These are "potlicker" hounds, not the pampered darlings of the Orange. No one in the Casanova has any money (dues are the lowest known); when fences are broken, the whole field turns to for repairs; the huntsman and whippers-in receive no pay. But hunt? Bring arnica and an appetite.

Loudoun County, Blue Ridge, Cobbler, Farmington, Fairfax

Other hunts of less conspicuous

[*Continued on page 108*]

J. Walter Thompson *Company*

Through six strategically located offices in the United States and eighteen offices in other countries which cover Europe, North and South Africa, South America, India and Australia, we offer advertising agency service which has demonstrated its merit for many of the world's foremost advertisers, several of whom we have served for more than twenty years.

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Men who do their best work after 50 are those who have learned to REST . . .

ARTHUR BRISBANE, famous journalist, says, "The greatest loss to the world, and especially to America, is that caused by the death of men that die too soon. A man's best work should be done between fifty and seventy. *And if he knows how to live wisely,* his best thirty years may be found between fifty and eighty."

Tired nerves and weary bodies need rest, particularly during the Winter season, when sickness is most prevalent. A Winter cruise via *White Star* or *Red Star Line* provides exactly the kind of rest that keeps men geared for successful endeavor. Medical authorities declare that nothing tones up the system so thoroughly—and delightfully—as a sea voyage. Let us tell you about the splendid winter cruises listed below:

World Cruise of the *Red Star* liner ***Belgenland,*** most famous globe-circling ship. From New York Dec. 15. 133 days. *Red Star Line* in cooperation with American Express Co. $1750 (up)—including complete shore program.

Mediterranean—Four de luxe 46-day cruises by *White Star* liners ***Britannic*** (new) and ***Adriatic.*** Jan. 8 and 17, Feb. 26, Mar. 7. Covering principal points of tourist interest—Algiers, Italy, Greece, Holy Land, Egypt, etc. $695-$750 (up), First Class—$420 Tourist Third Cabin, both including shore program.

IMM

WHITE STAR LINE
RED STAR LINE
INTERNATIONAL MERCANTILE MARINE COMPANY

30 Principal Offices in the United States and Canada. Main Office, No. 1 Broadway, New York City. Authorized agents everywhere.

Jericho Turnpike

[*Continued from page 106*]

distinction are the simple, informal Loudoun County (one of its joint M. F. H.'s runs a garage on the outskirts of Leesburg) and the quiet, farmery Blue Ridge (one of its joint M. F. H.'s used to run the R. F. D. between Upperville and Middleburg); the many times reorganized Cobbler is too new in its latest incarnation to have developed much character (Alvan Baird of Akron, Ohio, is one M. F. H.; A. W. McCarty of Virginia, the other); also new is the bubbling and slightly hysterical Farmington near Charlottesville (president, C. C. Ferncell, of Cleveland; M. F. H., Hollis Rinehart, son of the Croton Aqueduct-Architect Rinehart). But the Fairfax deserves a sentence, if not a paragraph to itself. Owner, operator, organizer, joint M. F. H. (with Miss Elizabeth Jackson of Washington) is A. Spencer Bowman, "last of the Barons" (because much of the territory he hunts is his own, including a village complete with post office); Bowman is a Kentuckian, therefore hospitable and horse-mad. Hunting with the Fairfax is fun, in spite of the many woods. Spring will almost certainly bring him official recognition.

Private hunts

Then, the private hunts. These are owned by individuals, and you hunt with them only as a guest; there are no memberships, no dues. Most notable is Mr. Larrabee's, both because its country (in Rappahannock) is remote from railroads, wire, hard roads, and because of Sterling Larrabee. He comes from Wilkes-Barre, and he married Sylvanus Stokes's sister. He fought at Gallipoli and he lives at beautiful "Oakwood" (peacocks on the lawn). Because he started his hunt in 1924, after a territorial scrap with the Warrenton, loyal Warrentonians are unconfessedly resentful of its success. Therefore, learning that he is trying to import red deer from England for stag hunting, their comment is: "A luminous gesture."

Another is the Montpelier Hunt, at Montpelier Station, also in Rappahannock County. Organized in 1912 by William du Pont Jr. and Sister Marion (now Mrs. Thomas H. Somerville), the original pack is now divided, brother William hunting a part in Elkton, Maryland, as the Foxcatcher Hounds, and Sister Marion hunting the rest as the Montpelier. To the many, many acres which she already owns, Sister Marion is constantly adding. A third hunt near Orange goes out with Manly Carter and his sixty-year-old negro huntsman Joe.

The outlaws

And, tapering off, a mention of the outlaw hunts. These are the carefree, fly-by-night packs which gaily trespass on whatsoever territory pleases them, despite the stern maps and mandates of the all-powerful National Steeplechase & Hunt Association. Organized hunts hate the outlaws; foxes are not plentiful enough to be killed without being missed, nor do trampled crops, frightened cattle, broken fences (outlaw-perpetrated, organized-attributed) improve the relations, never too good at best, between farmers and hunters. But the outlaws care not; gaily they meet (mostly in the hill country where there is less interruption) with a deal of gay drinking, and gayly they follow their mongrel packs. One such has Afton Mountain (site of the smart Swannanoa Club, which doesn't parade the fact that its beautiful name means, in Indian, "hog wallow") for a reckless playground; others infest every territory—all nondescript and wickedly chuckling.

. . .

Thus the tale of the Piedmont hunts, from diamond-spangled Orange (with its satin knee breeches) to the poor-white outlaw (with ragged corduroys). Said Masefield: "When he cannot range through all society from the court to the gutter, a man must go where all society meets, as at the Pilgrimage, the Festival, or the Game. In the English country, the main sport is fox-hunting, in which all who come may take a part, whether rich or poor, mounted or on foot." So in the Piedmont country. It is all there.

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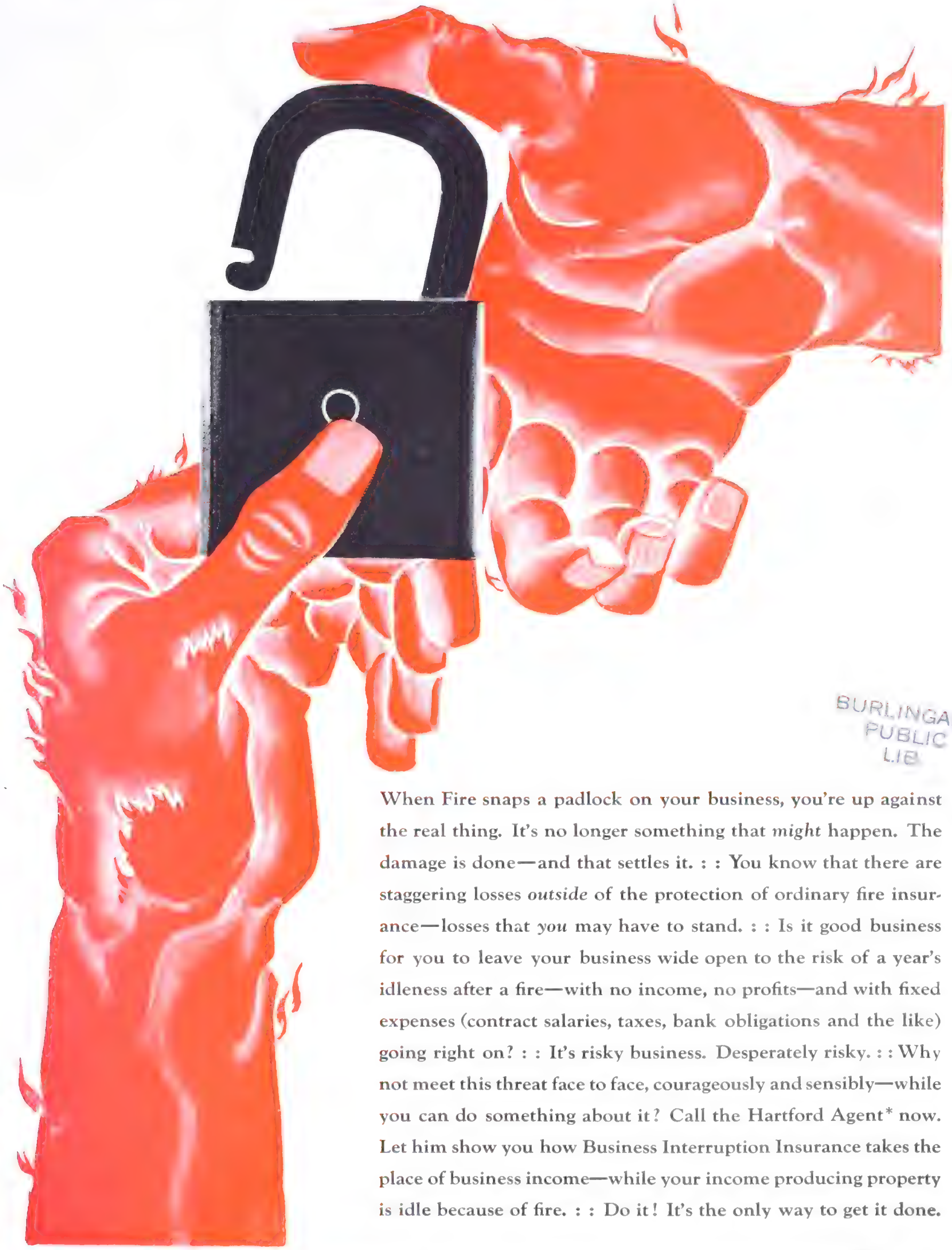

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When Fire snaps a padlock on your business, you're up against the real thing. It's no longer something that *might* happen. The damage is done—and that settles it. : : You know that there are staggering losses *outside* of the protection of ordinary fire insurance—losses that *you* may have to stand. : : Is it good business for you to leave your business wide open to the risk of a year's idleness after a fire—with no income, no profits—and with fixed expenses (contract salaries, taxes, bank obligations and the like) going right on? : : It's risky business. Desperately risky. : : Why not meet this threat face to face, courageously and sensibly—while you can do something about it? Call the Hartford Agent* now. Let him show you how Business Interruption Insurance takes the place of business income—while your income producing property is idle because of fire. : : Do it! It's the only way to get it done.

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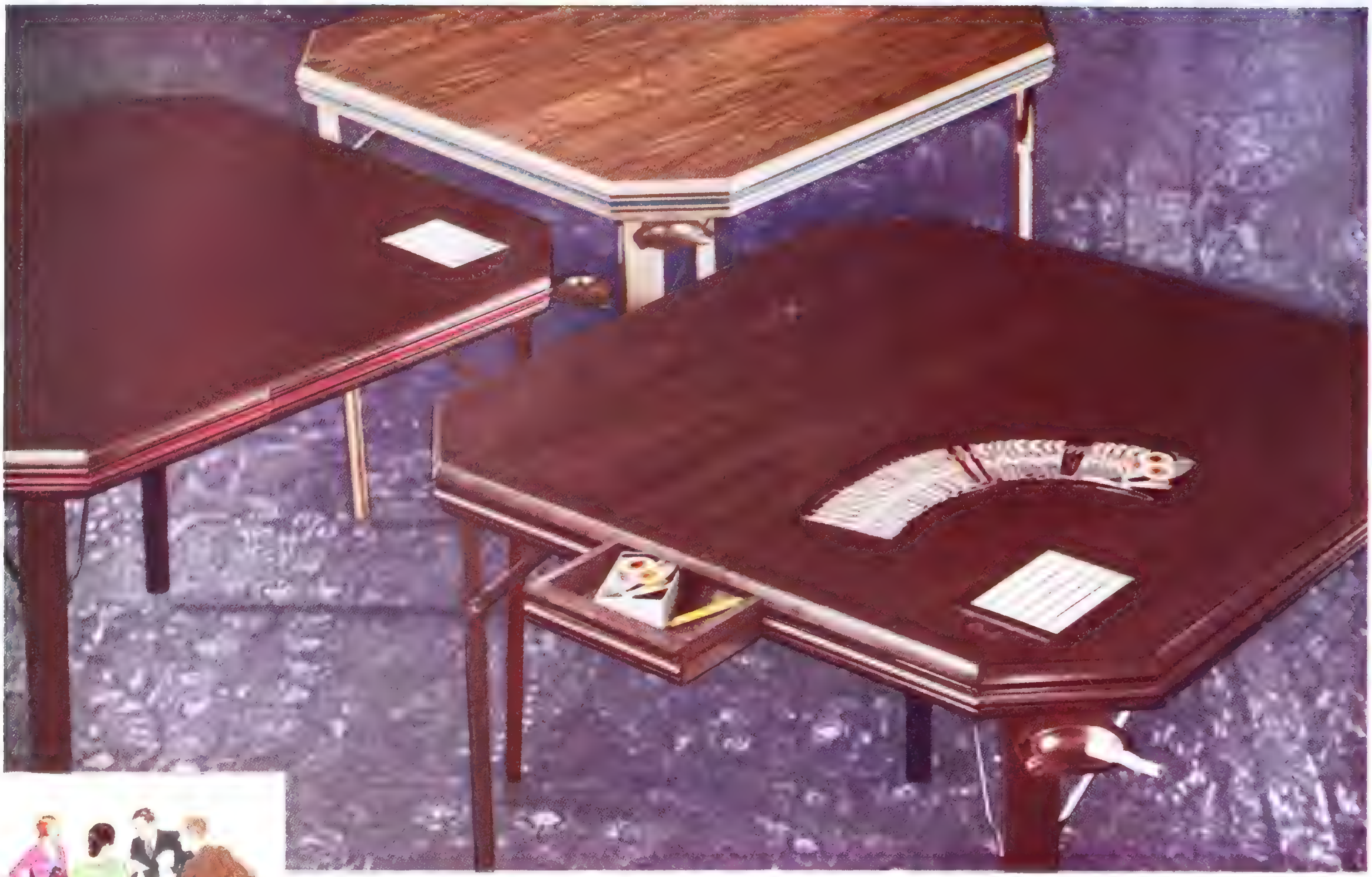
WRITE PRACTICALLY EVERY FORM OF INSURANCE EXCEPT LIFE

*If you do not know the name of the Hartford agent look under "Hartford" in your telephone book. If he isn't listed write the Hartford Fire Insurance Co., Hartford, Conn.



A CHALLENGE ACCEPTED!

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Give the Cowdin Table as gifts for Christmas, for birthdays, for anniversaries. Send us *one order* . . . giving names and addresses, and we will attend to all details, enclosing attractive gift card bearing the donor's name. PREPAID ANYWHERE IN THE UNITED STATES.

Dealers, all prices are f. o. b. your city

. . . to build a better card table for the type of people who are tired of makeshifts . . . tired of wobbly legs . . . tired of unsanitary, stain-collecting tops . . . tired of the cheap, nondescript table which strikes a jarring note in a carefully decorated home.

A big job? Yes. But we accepted. The Cowdin Table is our answer.

Made of beautifully-grained hardwoods—mahogany, walnut and gumwood, especially finished for card playing. Stainproof, sanitary. With the strongest, yet simplest folding device ever found on a card table. And three special features that add mightily to the pleasure of card playing—a built-in score pad, flush with the top, fed by a continuous roll of score sheets . . . a drawer that accommodates cards, pencils, and two detachable ash trays when not in use . . . and the ash trays themselves which snap into two opposite corners of the table, are handy to all players and *take up no space on top of the table.*

A challenge card table! Yet at the same time a handsome piece of furniture, thoroughly at ease in the finest home. A table that is wonderfully convenient for writing . . . for cozy fireside suppers . . . for a dozen uses. A table with real personality!

The Cowdin Table can be shipped anywhere by express or parcel post. Comes sheathed in a flannel covering, packed in individual cartons. Weight 15 pounds . . . in carton for shipping, 20 pounds. If not yet available through your favorite furniture store, department store or decorator, we will ship direct. The price is $18.75 delivered anywhere in the United States. Be sure to state whether you prefer walnut, mahogany or gumwood—or order in either assorted or matched sets if you prefer. The Cowdin Company, *Card Tables*, Portland, Oregon.

THE Cowdin TABLE

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☐ Ship______Cowdin Card Tables, prepaid, at $18.75. ___ walnut, ___ mahogany,
___ gumwood. I enclose check for $__________
☐ Send literature
TO DEALERS—
☐ Ship assorted set, with dealer's proposition. ☐ Send literature and dealer's proposition.
Ship to __________
Address __________

BUDGET FOR THE HUNT

THE following table is only an approximation since the hunter, if he wish, may spend almost anything for the pleasure of following his favorite sport. Roughly the cost will probably fall somewhere between the two extremes hereinafter indicated.

You *Must* Spend:		You *May* Spend
	Horses	
$200	Hunting three times a week, you can get by with one horse, carefully handled; you can also have three horses, expensive ones. $200 will buy the one horse; but in Orange, three may cost . . .	$4,500
250	Boarding through a five months' season @ $50 per horse per month . . .	750
10	Veterinary for the season . . .	30
30	Smith (reshod or shoes reset every three weeks @ $6.00 per horse per month) . . .	90
$490		$5,370
	Tack	
	Wherever you hunt, this should be of the best. It will therefore cost the same for both.	
$120	Saddles @ $120; one will do for all three horses, but some have private saddles for each horse . . .	$360
20	Bridles @ $20 . . .	60
40	Blankets, cloths, halters, etc., per horse, $40 . . .	120
$180		$540
	Accessories	
	Good, serviceable accessories will do both hunters.	
$ 10	Whip . . .	$10
3	Bootjack . . .	3
2	Pair of boothooks . . .	2
$15		$15
	Clothes	
$20	Such as you have must fit well, for a poor fit in the hunting field is not only painful but dangerous. The plain hunter will ride in one of his old felt hats, an ordinary shirt, and ordinary long (essential) drawers, which should not total more than $20.	
	On the other hand, you might equip yourself with . . .	
	Two silk hats @ $25-30 . . .	$60
	Two hat cords @ $1.50 . . .	3
	Two derby hats (steel lined) @ $16.50 . . .	33
	One-half dozen stocks @ $2.00, assorted white, with perhaps a blue one or so for ratcatcher . . .	12
	One-half dozen shirts (three flannel @ $7.50; three cheviot @ $6.00) . . .	40.50
	One-half dozen pair riding drawers, or others @ $6.00 . . .	36
	An engraved crystal pin and cuff links can cost . . .	125
	Two pink coats (one frock, one shadbelly) @ $125 . . .	250
	Three tweed coats @ $80 . . .	240
	Three waistcoats @ $15 . . .	45
	Four pairs of moleskin breeches (these must be kept spotless) @ $65 . . .	260
	Two pairs whipcord @ $65 . . .	130
	Two pairs brick-colored (one lightweight, one heavy) @ $65 . . .	130
50	One pair of these last two items the plain rider must have, but not	
	One pair jodhpurs . . .	40
	String gloves @ $2.00 . . .	6
	Leather gloves @ $4.00 . . .	12
35	One pair of brown boots at $35 can do, but you might have:	
	Two pairs hunting boots and trees @ $90 . . .	180
	One pair black boots and trees . . .	80
	One pair tan boots and trees . . .	80
	One pair field boots and trees . . .	80
	Three pairs canvas leggings @ $9.00 . . .	27
	Two pairs shoes and trees for leggings @ $22.50 . . .	45
	Two pairs shoes and trees for jodhpurs @ $25 . . .	50
	Four pairs spurs and straps @ $5.00 . . .	20
	Evening clothes: One dress coat . . .	135
	Two pairs satin knee breeches @ $35 . . .	70
	Assorted buttons and silk stockings . . .	20
	Presumably, you have white waistcoats . . .	
$105		$2,209.50
	Fees, dues, etc.	
$ 10	Here expenses separate antipodeanly. You can hunt splendidly with the Casanova, for instance, for $10 the season and nothing else, but elsewhere it might cost you . . .	$300
	In addition, capping fees (for chickens claimed killed by farmer-spared foxes, for ewes that lambed too quickly from fright, for fences broken and gates left open, therefore for cattle strayed and things busted by loose bulls, for wire cut and crops trampled) may run to . . .	1,000
$ 10		$1,300
$800		$9,434.50

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Tek goes to work from the first brush stroke. Spring and snap and cleaning-power are in its snow-white bristles. Designed with ingenious precision, Tek puts all its bristle-tufts into action on every curve of your dental arch . . . even behind the front teeth. It sweeps clean. And, automatically while it cleans, the extra width of Tek's brush-head massages and invigorates your gums. Tek-*sercise* is a new technique unequaled in its benefits to your teeth, gums and health.

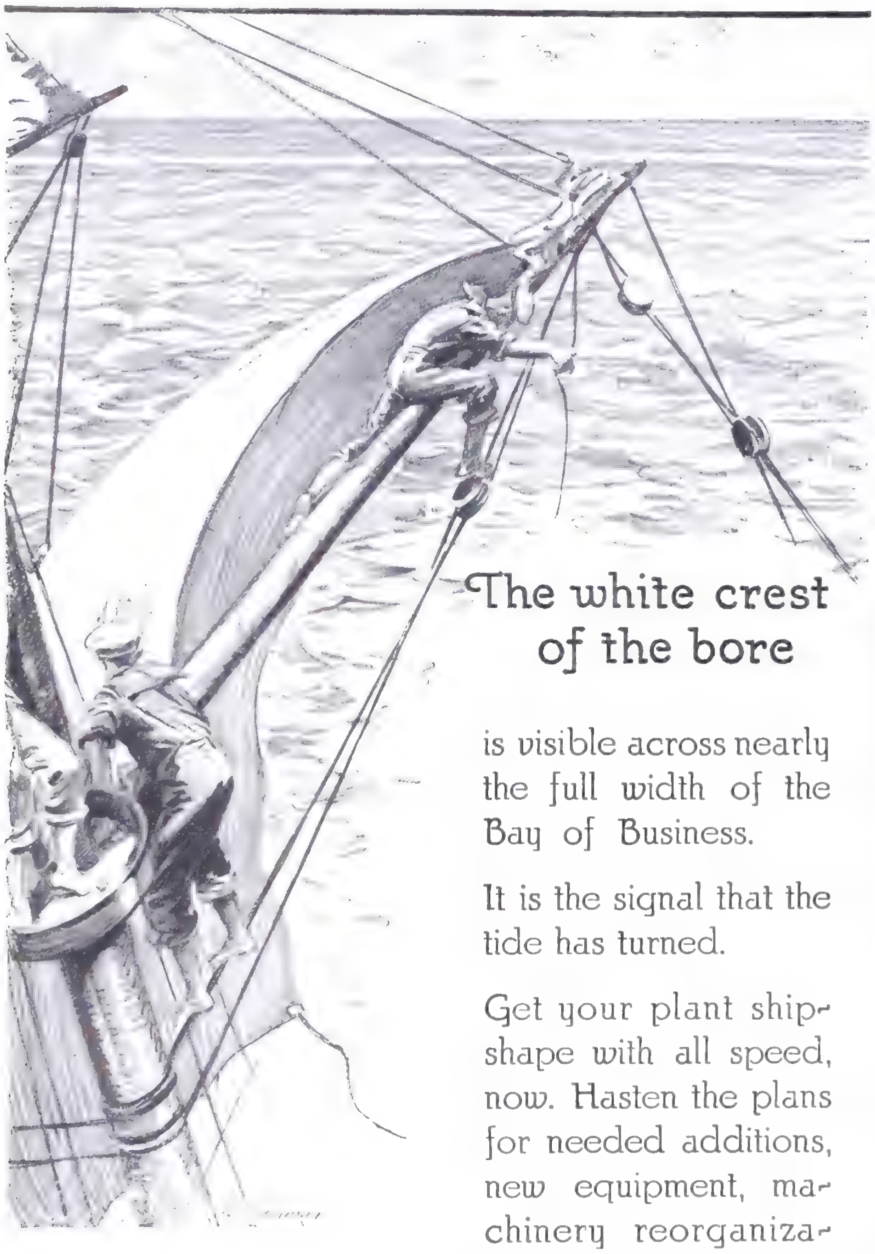
Sealed in a windowed container where it may be seen without being touched . . . your Tek tooth brush comes to you in perfect condition . . . sterilized . . . ready to use. Compare Tek to any brush of any price.

Tek
the modern
TOOTH BRUSH

Tek 50c. With dental floss in handle 75c. Tek Jr. 35c. Pastel Lucite handles. Guaranteed by the world's largest makers of dental and surgical dressings.

Johnson & Johnson
NEW BRUNSWICK, NEW JERSEY

Tek
the Modern
TOOTH BRUSH



The white crest of the bore

is visible across nearly the full width of the Bay of Business.

It is the signal that the tide has turned.

Get your plant shipshape with all speed, now. Hasten the plans for needed additions, new equipment, machinery reorganizations, so that when the signal comes you will leave a wake of profit.

Soon you may have to issue the command, "Full sail! Full speed!" But now look to your ship, the tide has turned.

J. E. SIRRINE & COMPANY

Engineers

Greenville South Carolina

Textile Mills
Warehouses
Surveys
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Rayon Plants
Tobacco Factories
Steam Plants
Water Supplies
Reorganizations

General Industrial Plants
Production Studies
Hydro-Electric Systems
Power Application & Lighting
Sanitary Engineering

The American Can Company

[*Continued from page 42*]

increase in income and in earnings. As its early history stands out against a background of stocks and promoters and manipulation, so its recent and present history stands out against a background of Iowa corn and Maryland tomatoes and Wisconsin peas and Hawaiian pineapples and California peaches. It should be remembered that the American Company is a can-maker, not a canner, and has no commercial interest in the packing of foods. But its business is of course directly dependent upon the canning business, which has increased probably far beyond even the vivid imaginations of the Can organizers. In 1905, about 41,000,000 cases of foods were packed in the U. S. In the present year the pack may reach 200,000,000 cases. As there are on an average twenty-four cans to the case, the packers are using 4,800,000,000 cans, and though all can companies appear extraordinarily sensitive as to the number of cans they manufacture or the proportion of the total represented by their production, a 30 per cent estimate for American would appear distinctly conservative. The cans themselves (those that are food containers) cost a little less than two and one-half cents apiece, the business representing therefore the infinite multiplication of an infinitesimal profit. Like all industries that have to do with agriculture, the can-making business is somewhat affected by crop fluctuations, but the possibility of all crops going off the same year is sufficiently remote. Effects of the dry spell during the summer of 1930, for example, were much exaggerated in current gloomy predictions, and the total 1930 pack of staple foods and vegetables has been little, if any, under the 1929 figure. Furthermore, the can-makers are rapidly developing what is known as the *general line* business. A general line can (as distinct from a packer's can) is a can not containing fruit and vegetable products. Paint cans and oil cans, for instance, are conspicuous examples, and today nearly half the business of American and about 30 per cent of Continental is in the general line field. A somewhat startling example of the general line can has been furnished by Canadian distillers who have been putting up their whiskey in highly lithographed cans, the theory being that the bootlegger who so readily imitates labels on bottles cannot duplicate the expensive and complicated process of multicolor lithographing on tin.

And the American Company serves a business which is still expanding. The canner has been one of the notable gainers by the shift in population from farm to city. In 1900, only 40 per cent of the U. S. population lived in cities. In 1930, the urban dwellers were nearly 60 per cent of the whole. And during this thirty-year period there has also been a constant increase in the number of apartments as compared to the number of homes. There is a strong kinship between the kitchenette and the can. There is an equally obvious relationship between the large city—particularly the large eastern city, far removed from farm lands and their harvest—and the consumption of canned rather than of fresh fruits and vegetables.

Trite is the quotation concerning our having been given memories in order that we might have roses in December. Applicable is the adaptation that we have been given canneries in order that we might have peas and tomatoes and fruits in the barren months of winter. Many a modern city meal not only begins with canned soup and ends with canned pears and peaches, but may well include canned asparagus and corn and perhaps even present, as the *pièce de résistance*, some such canned specialty as beef *à la mode*. Vegetables such as artichokes, hominy, and pumpkin; fruits such as grapes, strawberries, and grapefruit; fish such as anchovies, shad, and clams; specialties such as Boston brown bread, fig pudding, and Irish stew—these and many other tinned products have unquestionably given the American diet a marked variety, have also saved many hours otherwise spent in the cooking of fresh products. As for the ancient prejudice against canned foods, that feeling dwindled along with the feeling against bakers' bread, and certainly the home canner is no menace to the canner of commercial nature. Just as the

[*Continued on page 114*]

INVESTMENTS

ARE BOUGHT

ON CONFIDENCE • VERY FEW private investors consider themselves experts in buying stocks and bonds. They prefer to trust the seasoned judgment of a reliable investment house when it comes to choosing securities. • For this reason the uccessful investment banker is constantly alert to maintain the respect and confidence of his clients. The heads of large investment ouses were among the first to discover the value of executive letters for announcing new issues and discussing financial trends. For ears they have used them, not only to strengthen their position with present customers but to create a favorable attitude in the minds f prospects before the call of the salesman. • On such letters rests a great responsibility. There can be nothing cheap or careless about heir appearance, for to the man who receives them they stand for the firm itself. • That is why leading investment houses are satisfied vith but one quality of paper for their executive letterheads. Strong, crisp and beautiful, made wholly of clean, new, white ags, Coupon Bond fitly represents the sound judgment, the staunch integrity of the concern that sends it out. And its watermark is a ecognized symbol of excellence in business offices all over the land. • You will find helpful suggestions for using executive correspondence profitably in our new booklet, "The Executive Letter." It will be sent you, together with our portfolio, "The Modern Trend in etterheads," upon request. (In writing for them, please use your business stationery.) ℂ *Coupon Bond is but one paper in the agle-A Line of Bonds, Ledgers, Writings, Index Bristols, Offsets, Covers, Book Papers, Mimeograph and Manifold Papers—the* right *paper for every business purpose.*

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EAGLE·A·PAPERS

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When you travel your passport is your letter of introduction to foreign officials. It identifies you. It carries the prestige and protection of your government. It breaks down barriers.

Your business letters travel for you. They often save you the trouble of traveling. Does the paper they are written on help establish your identity? Does it reflect the character and standing of your firm?

Distinguished business stationery is in a sense your letters' passport. It gives them an added force, a greater measure of prestige. It often breaks down barriers.

Crane's Bond is the finest product of a house that has been making distinguished writing paper for 130 years.

CRANE'S
BOND
for letterheads and envelopes
CRANE & CO., INC. · DALTON, MASS.

The American Can Company

[*Continued from page 112*]

Campbell Soup people have long pointed out, the housewife today can buy a virtually ready-to-serve product for less than its raw materials would cost her.

To the prosperity of the canner, the can-maker has constantly contributed. He has developed the open-top (solderless at top and bottom) can to replace the old container in which there was the possibility of solder particles appearing in the contents. Through his own laboratories and through his contributions to canners' research, he has supported the experimental work in many new methods and processes. American has recently developed the vacuum process, through which it hopes to make the canned foodstuff virtually identical with the fresh. Among other large American customers are Del Monte, Beechnut Coffee, Lipton Coffee, Hormel, Van Camp Packing, and Patton Paint companies. Large customers of Continental are Campbell's Soup, Standard Oil of New Jersey, and William Underwood companies. Other can-makers are likely to specialize in general line cans. Thus the Metal Package Co., third largest can-maker, makes containers for the following non-foodstuff companies: Standard Oil of New York, Colgate - Palmolive - Peet, United Drug, Gulf Refining, and McKesson and Robbins companies. With the exception of the milk canner, few large canners manufacture their own cans.

Largest U. S. companies have also expanded into Great Britain. In July of the present year, American formed British Can Shares, Inc., through which it acquired a large interest in British Can Co., Ltd., which manufactures about 25 per cent of the metal containers made in the British Isles. Continental Can has also entered the British field through the purchase of something less than 20 per cent interest in Metal Box & Printing Industries, Ltd., which does more than 50 per cent of British canning. The British have developed the lithographed can to a point beyond the best practice in this country, but their ordinary packers' tin cans are not so satisfactory, and the British canner is as likely as not to make his own cans. Thus American and Continental expect to learn valuable lithographing lessons, expect also to demonstrate in Great Britain their ability to turn out the standardized container in great quantities, at low costs.

Out of the wreckage of the old Trust, therefore, the Can Company has retained the leading position in an industry that has been consistently prosperous for many years and that looks confidently forward to an even more prosperous future. Back in 1908 its common could have been purchased at $8.00 a share; in 1926 its high was 130½, at which point the $100 par was reduced to $25 and the stock split six for one (a 50 per cent stock dividend). The new stock was one of the speculative favorites of the 1929 market, reaching a high of 184½, though breaking to 86 in the crash. During the year, 13,463,200 shares changed hands, or more than five times the total outstanding, a rate of turnover about twice that of U. S. Steel and not greatly exceeded by Radio Corp., whose six to one ratio of sales to shares outstanding was probably the highest of any major company.

There is perhaps no moral to be drawn from the Can story. The fact that its success came after it had ceased to be a monopoly is of course no monopolistic argument, since much of that success came from consolidating the position which it derived from its original character. Its present management—Chairman F. S. Wheeler and President H. W. Phelps—have been with the company since its organization, and the company is today markedly reticent concerning both the story of its past and the gross income of its present. On the other hand, it has been and remains of tremendous service to the canning industry. Its original promoters may appear to have been governed more by the acquisitive instinct than by social or economic considerations. Yet out of their extensive but terribly ramshackle structure has grown the sound and substantial corporation of today. From an industrial standpoint, it would appear that the good men do lives sometimes after them and that it is the evil which is interred with their bones.

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Wheat to Flour to Bread

[*Continued from page 85*]

It is quite likely that General Mills can look forward to continued prosperity, comfortable profits. But optimism cannot be permitted to run unchecked. For, just as the business is depression-proof, so is it boom-proof. Few speculators are interested in General Mills stock (listed on the New York Exchange) or for that matter in the stock of any other milling company. He would not have any fun. General Mills is not apt to make a great deal more money next year than it did this. There may well be a gradual climb, obtained by careful milling and even more careful merchandising, and, after the possible absorption of smaller companies, the elimination of some competition. More business is undoubtedly there to get—at someone else's expense. But there can be no astounding jump in sales. Bakers and bread-eaters do not bake and eat that way.

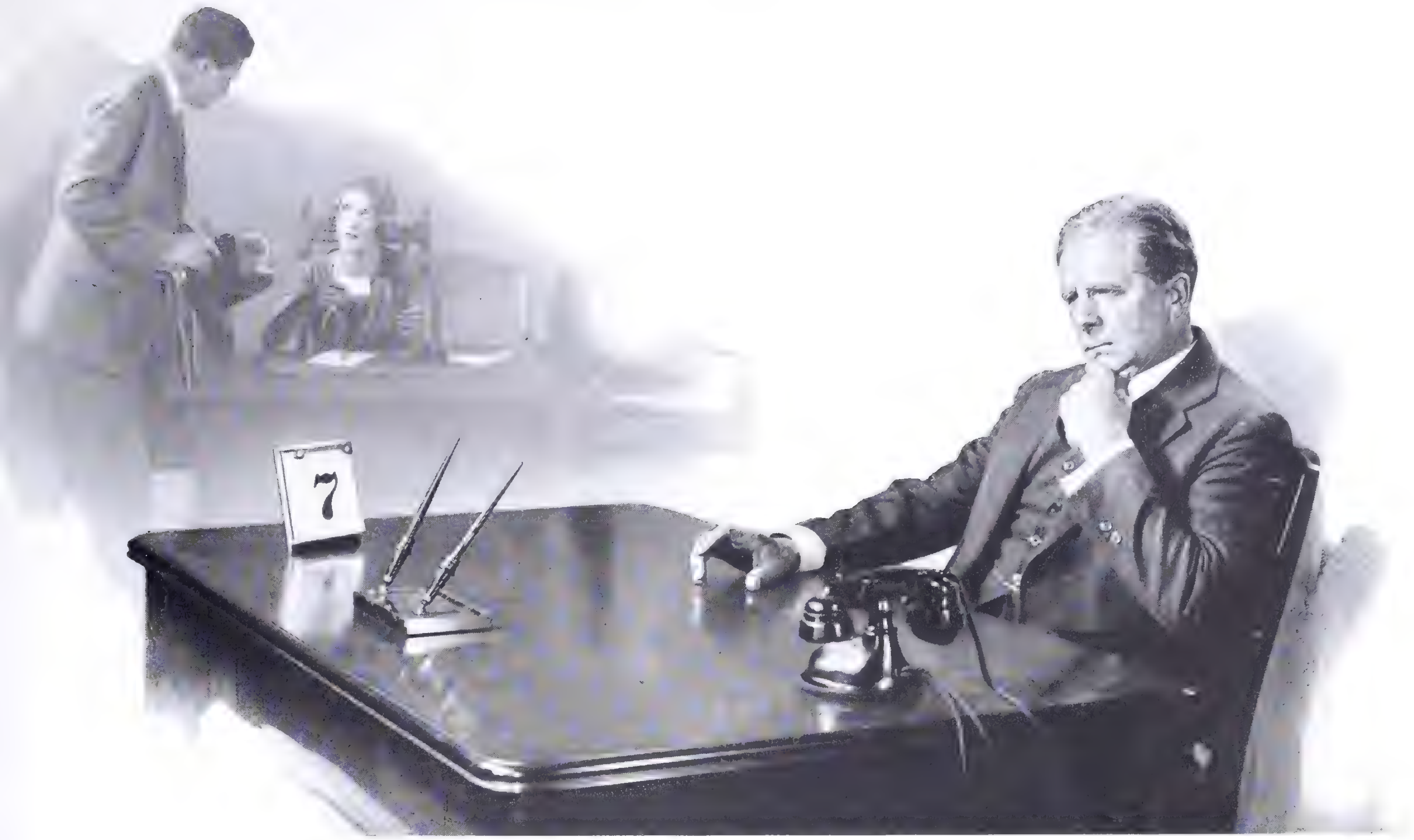
THE PRODUCT: 20,000,000,000 LOAVES

TO FILL America's prodigious bread basket, the vast fields of the Middle West last year produced about 800,000,000 bushels of wheat. Collected first in many small elevators throughout the wheat belt, the grain moved quickly to the great terminal storage centers. Of these Minneapolis is first, with sixty-eight elevators and a total capacity of 75,864,000 bushels. Next comes Chicago, with sixty-five elevators (capacity: 53,253,000 bushels), one of which (owned by the Chicago & Northwestern R. R.) is largest (10,000,000 bushels) in the U. S. Third wheat center is Duluth; fourth is Buffalo.

From these centers, wheat flows in an endless stream to the millers. Whether it goes to biggest General Mills (daily capacity: 85,600 barrels) or to second biggest Pillsbury (45,000 barrels) or to Commander-Larabee (30,000 barrels), its processing never varies. Four and one-half bushels of wheat will make one barrel of flour. A long wide belt carries the wheat from company elevator to dusty mill. It is given a dry bath; successive screens draw off lighter particles (good wheat). Between grindings —wheat to flour is all a matter of grindings and reductions—it passes through a giant, wiggling, toddling machine full of silk bolting cloth of different sized meshes, each mesh doing separation work. The final result is patent flour—best grade. Out to freight cars and away. The 800,000,000-bushel harvest after export, by-product manufacture, etc., is now 122,000,000 barrels of flour.

Some goes abroad (14,000,000 barrels); some to the makers of self-rising flour (10,000,000 barrels); some to the cracker and macaroni makers (8,000,000 barrels). The rest (90,000,000) is divided between housewife and baker. Of every five barrels, the housewife takes two. One-fourth barrel, she makes into cake, pie, and doughnuts, but the bulk of her allotment becomes bread. Of every five barrels, the baker (biggest: General Baking Company) takes three. Four-fifths of *his* share emerges from his ovens as bread. Metropolitan New York eats 2,000,000 loaves daily; New Orleans is (per capita) hungriest, each inhabitant consuming three-quarters of a loaf each day. The whole country disposes of 20,000,000,000 loaves a year.

Bread figures show little variation. In spite of health diets, reducing fads, etc., 90 per cent of all bread consumed is white bread. Higher standards of living have brought wider varieties of food, and per capita consumption of flour has fallen from 226 pounds in 1879 to 175 pounds in 1929. In spite of this large decrease, the normal population increase pushes production ahead at the rate of a little more than 1,000,000 barrels a year. The price of bread did indeed jump from five cents a pound (the normal loaf weighs one pound) in 1913, to eleven cents in 1920, and is now slightly less. But this is due to new wage scales and not to shortages or surfeits of wheat. The actual cost of the wheat in a loaf of bread is less than two cents; the rest is shortening, milk, molasses—and overhead.



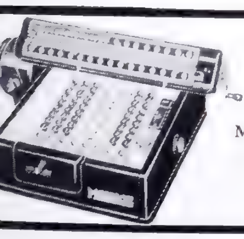
"He's too busy to see you today"

Should the real answer be, "He doesn't want to see you—he's got nothing to say to you—he's still waiting for last month's figures before he can talk intelligently about his present or future plans?" Isn't it a sad commentary on business efficiency that so many are busy doing nothing between the first and the seventh of the month?

A week out of every month—nearly a quarter of the entire year wasted in nervous waiting, drumming idly on a desk!

In countless businesses of every size and type Monroe machines and Monroe methods are keeping routine work up to the minute. Monroe simplicity of operation plus Monroe short-cuts and first-time accuracy have speeded up figure production so that not only are the daily facts known—but those extra figures which give the completed picture are now available.

If the first weeks in your business months are made up of days when you don't know just where you stand, consult your local Monroe representative. Through him the combined knowledge and experience of the Monroe organization is at your disposal. Or mail the coupon.



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Profits are commonly thought of as what remains after expenses are deducted. Profits should be the first deduction — they are Capital's wages. For them the business exists. The task of merchandising is to first provide for profits.

"Adequate Profits" is the title given to a brochure outlining the scope of service rendered by Bigelow, Kent, Willard & Company, Inc. We shall enjoy sending you a copy upon request.

PARK SQUARE BUILDING, BOSTON

A Burlesque Tyrant

[*Continued from page 59*]

one only need be employed and he shall be paid foreman's wages." Suppose a slight alteration is needed that can be done by an apprentice whose wages are, let us say, $9.00 a day. An apprentice is sent by the union, but he gets foreman's wages, $21 a day.

International Alliance of Theatrical Stage Employees and Moving Picture Machine Operators of the U. S. and Canada.—At Dr. Harry Emerson Fosdick's Riverside Church (gift of John D. Rockefeller Jr.) a crowd of parishioners gathered on September 9 to see the Bourdon bell of the carillon hoisted into place. They saw in addition one of the bitterest of fights within the American Federation of Labor. Local 3 of the International Brotherhood of Electrical Workers was in charge of hoisting the carillon. They refused to do it unless Local 52 of the Stage-Hands Union, which was running the electric sound apparatus of some Fox Movietone cameras, allowed them to run the cameras. Local 52 refused. Local 3 then called off every union man working on the church. Local 52 capitulated after persuasion from church authorities and offered to let Local 3 run the sound cameras. Local 3 tried and could not produce a single man capable of running them. However, Local 3 still refused to let Local 52 run the cameras. Meantime, the parishioners had waited and all work been held up for one hour and one-half. The superintendent of the church then, in despair, ordered the Fox Movietone workers off the grounds. As their trucks pulled out of the yard, the carillon went up.

International Union of Elevator Constructors.—During construction in New York City, if an elevator is installed for the purpose of taking prospective tenants or workmen up or down, an elevator constructor must be hired for full time. His job is giving the machine a ten minutes' oiling every morning. His pay is (in New York) $13.20.

Typographical Union No. 6.—The employer in New York who owns a composing room is not allowed to give orders to any of his workmen. The union foreman is the only executive who can either hire, discharge, or give orders in the individual departments.

Bogus union rules cost the publishing houses of New York $1,000,000 a year, said Louis Wiley (business manager of the New York *Times*) recently. Chief among these rules: "All type matter in local advertisements, when matrices, cuts, type matter or plates are furnished the office instead of copy, shall be reset as nearly like the original as possible within four working days of publication." This means that men spend hours breaking up and remaking material which could be used over and over again. It means on certain papers that the union men agree not to break up the material if the employer will pay them for the time they would spend if they did break it up.

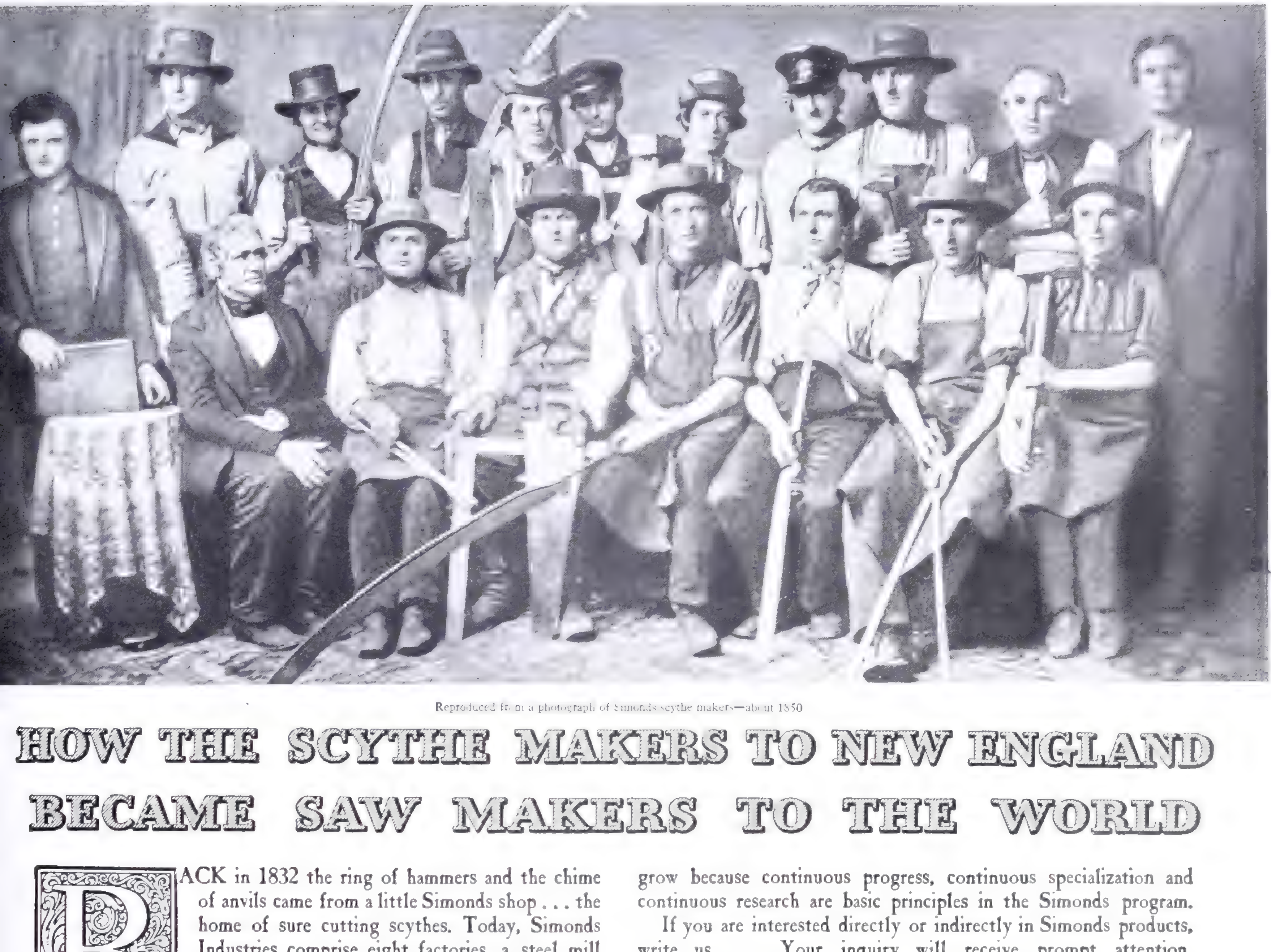
"No man shall be deemed a competent operator unless he sets a minimum of 4,500 ems . . . per hour," runs another rule. The average man can easily set 7,500 ems, the good worker about 10,000. But both classes of men actually set about 5,000 ems in order not to be spoken to by the authorities for working on the edge of the margin and not to be spoken to by the union foreman for doing "too much" work.

Amalgamated Lithographers of America.—Only one apprentice is allowed to every five journeymen, although in open shops, one to three has been proved the most efficient ratio. Thus skilled workmen spend time doing work that an untrained boy could do, and the dearth of apprentices results in a dearth of workmen that results in high wages. The plasterers union at one time, when at the height of their power, refused to admit a single new member.

International Union of United Brewery, Flour, Cereal, and Soft Drink Workers of America.—Beverage must be furnished free to all employees while on the job.

[*No doubt* FORTUNE *subscribers could supply examples even more ludicrous than the above. If they will do so a further selection will be published in a forthcoming issue*—Ed.]

The First Simonds Shop · 1832



Reproduced from a photograph of Simonds scythe makers—about 1850

URLINGAME
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HOW THE SCYTHE MAKERS TO NEW ENGLAND BECAME SAW MAKERS TO THE WORLD

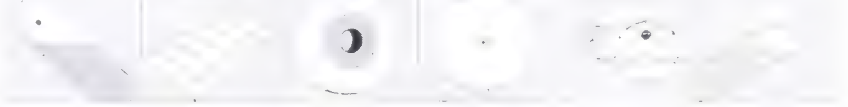
BACK in 1832 the ring of hammers and the chime of anvils came from a little Simonds shop . . . the home of sure cutting scythes. Today, Simonds Industries comprise eight factories, a steel mill and more than a score of sales branches and service stations . . . Simonds superior cutting edges are used in every clime and country. The one-time scythe makers to New England have become the saw makers to the world.

Spanning a century that witnessed the development of unequalled industrial achievements, the development of Simonds Industries paralleled the growth of American industry—paralleled too, the resulting need for the finest cutting tools. Simonds has led the way to many outstanding advances toward the quantity production methods which have made American industrial practice a world synonym for efficiency . . . Simonds Industries have grown and will continue to grow because continuous progress, continuous specialization and continuous research are basic principles in the Simonds program.

If you are interested directly or indirectly in Simonds products, write us . . . Your inquiry will receive prompt attention.

SIMONDS INDUSTRIES

World's Largest Saw Makers



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Established 1832 . . . FITCHBURG, MASS.

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ACK OF THE EDGE . . THE STEEL . . . BACK OF BOTH . . SIMONDS

SALES FOLLOW THE FLOWERS

The Mortons are far from wealthy. Nor are they at all poor. Pleasantview where they live is looked upon by the department stores of the near-by big city as an excellent hunting ground for the charge account. And while the Morton's new-old house is hardly imposing, it speaks eloquently of good and gracious living. Next month they will have a new car of slightly better make than their old one. The house is painted every two years. The local merchants treat Mrs. Morton with the deference they reserve for known home owners and community leaders. Really one need only to drive past the Morton place to know it for what it is. For it has a garden — a real garden. And in this age as in all others that have preceded it, a well-kept, well-planned garden is the badge of buying power. Sales today follow the flowers, because sales more and more depend for volume upon those vogues which really grip the great public. And garden making is the newest and greatest vogue. To make a real garden one must live in a detached house—a house that needs paint, some remodeling, improvements of all kinds. And for most people to develop the desire for a garden they must own that home. When Better Homes and Gardens struck its editorial keynote eight years ago, more than a million families were waiting for just such a magazine. They wanted "how-to-do-it" articles on garden planning, on home building, on interior decoration, on the cooking which are such important parts of wise living. 85% of Better Homes and Gardens' present circulation of 1,375,000 own their own homes; 77% are located within the retail shopping areas of cities over 25,000. Better Homes and Gardens since 1922 has been the fastest growing monthly magazine in America. It is healthy growth—not forced by selling tricks or inveigled with fiction. Isn't it about time that you looked into this enormous vogue of the garden — perhaps the most responsive and most responsible market in America?

BETTER HOMES AND GARDENS
DES MOINES, IOWA

Stone & Webster

[*Continued from page 98*]

inally, to profit

The three major operations ust described have one aim: to nake a profit. Let us conclude his study of a great utility comany with some words on the nost vital aspect of all: earning ower.

First of all, whence come such rofits as there may be? It is of ttle value to state that of the aproximately $480,000,000 assets hich the consolidated balance heet will show, some 85 per cent vill represent capital tied up in ublic utilities and only 15 per ent in engineering and banking. he difficult thing to determine what proportion of the comany's earnings will come from uch investments and what proortion from engineering and anking activities. Construction nd engineering work, as well s investment banking, are busiesses with fluctuating earnings. t is usually a matter of a feast r a famine. Public utilities re comparatively stable in this espect. At the present time tone & Webster stands with oth feet planted squarely in tilities, deriving, as will shortly ppear, the major portion of its arnings either directly or inirectly from public utility opertions. Stone & Webster, however, by no means regards itself s immovably planted in the ublic utility field. With an rganization equally potent in ngineering, investment banking, nd management functions, Stone Webster justly feels that it is vell equipped to put forth a naximum effort in any direction vhere business opportunities apear. The source of such an rganization's earnings thus may e expected to vary more or less rom year to year. A breakown of contemporary Stone & Vebster profits will reveal both e company's earning power nd its present sources.

The total Stone & Webster onsolidation may be expected show earnings in the neighborood of $9,500,000 for the curent year, of which some $5,500,-00 or more than half will be erived from the operations of ublic utility interests directly ontrolled, some $2,500,000 from onstruction work and investent banking activities, with balance of a $1,500,000 to be allocated between interest and dividends on investments (chiefly public utility securities) and fees for the supervision of properties (one-half of which are now owned). It is apparent that utilities are the backlog of Stone & Webster earnings.

In more detail, the earning power of the various components of Stone & Webster can be analyzed as follows:

Stone & Webster and Blodget had net income for the year ended May 31, 1929, of $1,286,469, of which only two-thirds or about $857,000 went to Stone & Webster. Earnings in 1929 were somewhat higher, but will undoubtedly be considerably less in 1930.

Although Stone & Webster Engineering Corporation reported net income for eleven months ended May 31, 1929 (the latest published figures), of only $548,515 (or at the rate of $600,000 for the full year), there is basis for the belief that the normal earning power is some three times this figure.

For the nine months ended March 31, 1930 (*before* the absorption of Engineers Public Service), Stone & Webster reported consolidated net earnings of $3,833,047 (after eliminating $2,027,516 nonrecurring profit on sale of securities which was carried direct to surplus) or at the rate of $5,100,000 for the full year. This income includes cash dividends but not stock dividends on Engineers Public Service stock.

Engineers Public Service showed net income available for common of about $5,100,000 (after reserves) for the year ended July 31, 1930, and Sierra Pacific Electric, newly absorbed by Stone & Webster, $570,000 (before reserves) for the year ended July 31, 1930.

The primary change that has come to Stone & Webster is that formerly the company served the utility industry and today it *owns* a substantial share in the industry. This change brings with it inevitably a host of consequences. From now on Stone & Webster, like every other utility company, will be subject to the characteristic influences that shape the industry's prosperity: governmental regulation must be reckoned with, for example, as must the growth or decay of the various localities served by the company's plants. New problems, new opportunities confront Stone & Webster on the threshold of its final metamorphosis into a public utility company.

THE most completely equipped resort in this country for the treatment of cardiac disturbances, including the only natural calcium chloride Nauheim brine springs in America. For literature address The Medical Department, The Glen Springs, Watkins Glen, New York.

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New York Curb Exchange
New York Cotton Exchange
Chicago Board of Trade
Chicago Curb Exchange Assn.

Private Wire Service

OTIS & CO.
Established 1899

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Offices in twenty-eight cities

Momentum

MOMENTUM means mass speed ahead. In business it depends on a nice balance of quantity in production and velocity in sales. How *much* — how *quick*. Reduce either of these factors, put one out of balance with the other, and momentum is lost.

In any *continuous* forward movement of business, momentum, like success, gains power on its own impetus. Curb it and business lags.

Modern Accountancy, in principle, is a basic necessity to business momentum. As a *fact*, it is the essential oil for smooth, unhindered movement. Organization is visionless without its dependable facts and figures. Its business budget, its protective costs, its system, knowledge, control — are all vital factors to the easy running of material things.

But *most* important, Modern Accountancy is the inspiration, in any business, to *mental* momentum—the orderly, continuous speed-ahead of fearless, constructive thought.

ERNST & ERNST

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TULSA
WACO
WASHINGTON
WHEELING
WILMINGTON, DEL.
WINSTON-SALEM
YOUNGSTOWN

The Seal and the U. S. Treasury

[*Continued from page 72*]

Fur Company had developed a vegetable dye, Mr. Rice's dye was alkaline, and the result of the hearing was that St. Louis was made safe for seals. And from St. Louis today come 90 per cent of all your dyed sealskins.

St. Louis

A pleasant and an efficient place is the Fouke Fur Company. Here are received the skins from Alaska; such blubber as has not already been removed is removed and the processing, the cleaning and wringing, the salting and the drying in maple sawdust begin. It takes skilled labor to remove the bristly hair and skilled machines to remove the bristly hair that the skilled labor did not eradicate. At certain moments during the operations the skins are so stiff that you could almost stand one up in a corner; when the dyers are through you can run an entire pelt through a loop formed by your thumb and forefinger. The fur near the head and shoulders is short; the fur on the back is longer. When the dyers pass their sponges and brushes over the pelt they know, instinctively, after a time, just how much pressure to apply to obtain a uniform result. To the lay eye it is all rather baffling. The skins are ugly and stiff and gray when they arrive. When they are up on the second floor ready for auction they are soft and lustrous. When officials of the company talk to you and a skin is spread before them, incessantly they run their hands along the fur. You should spread your hand when you do it so that you can feel the fur between the fingers, the most sensitive part of the hand. It gives a sensuous pleasure of which no seal man has ever tired.

Twice a year the skins are sold at auction, usually in lots of about seventy. There are many flags draped about the auction rooms because the auction is being conducted for the government, the Fouke Fur Company being actually the government's accredited agent for dressing, dyeing, and selling of the sealskins. The auctions are not far different from those in art galleries. Bidders never speak. Sometimes they raise a pencil or a finger or an eyebrow. It remains for the auctioneer (Colonel Fouke) and his assistants properly to interpret the signs. There is a tale told of a man who informed Colonel Fouke that his bidding signal would be closing his eyes. Unfortunately he fell asleep. It was all very embarrassing afterwards. There are always many bidders. Of note among them are Revillon Frères, Halle Bros., H. Jaeckel & Sons, and Alfred Eisenbach. In 1928 these gentlemen and others bid and paid a total of $810,283.97 for a total of 23,856 skins. From which it may be gathered that this completely unique and almost isolated industry (dyeing still goes on in London but in virtually a moribund state) is not unprofitable. The retailers use eight or nine skins for a long coat, sell it for $600 as an average price, for about $1,000 as top price.

Bois de campêche

In common with every other industry in the world the seal skin industry has rivals and has its good years and bad years. More or less has disappeared the day when every housewife felt she *had* to have a long black seal coat before she could go to her friend's house and play bridge. The seal coat you are apt to see now is likely to be a waisted jacket or, if long, it will give an appearance of being light (which it is) instead of being terribly, terribly heavy (which it was). Retailers are apt to tell you that last year black caracul especially but also fox and Russian wolf were popular. The lamb family, too, they say, had a good year. But the purveyors of seals are not despondent. They have confidence in their product. And they have particular confidence in the seal's superiority over its rival, the so-called Hudson seal, which is really a muskrat and comes chiefly from Louisiana. There is little respect for the Hudson seal or muskrat among true seal men. But if further confidence were needed, lovers of sealskins would find it in contemplation of *bois de campêche*.

Seals may be dyed in one of three colors: black, *châtaigne d'or* (golden chestnut), and *bois de campêche* (logwood brown). For obvious reasons the trade clings

MICHIGAN

GRAND RAPIDS

Strike-less
Racket-less

PROPERTY owners don't wave the red flag . . . and the average Grand Rapids factory worker either owns his home, or plans to do so. He still holds fast to the old-fashioned virtues . . . . loyalty, thrift, conscientious work. Since he pays taxes, he gets good government. And so the Grand Rapids "set-up" is distasteful to gangsters and racketeers . . . No strike for 20 years . . . no organized crime! Instead, clean labor relations, clean production costs, clean profits.

There are many other reasons why a Grand Rapids factory unit or distribution center brings you more profit on capital, more profit on sales.

This bank, counsellor to successful businesses for 77 years, will gladly give you the entire picture.

OLD KENT BANK

West Michigan's Largest

WHILE OTHERS MAY HESITATE « « « « «

KANSAS CITY s growing and prospering and making a good business year of 1930. « Within two ears, Kansas City has set a new pace in industries established, in construction and in xpansion of existing industries. Payrolls have increased *many millions of dollars.* « In ncreasing volume the 19 million people served more economically from Kansas City han from any other metropolis are buying from Kansas City wholesalers and manu-cturers *and not from diſtant markets.* « A recent Interstate Commerce Commission uling has abolished the Mississippi River basing line and established new and lower rough rates between Kansas City and the East. « Census figures of 1930 place ansas City, Missouri, in the 400,000 class, and its thirty-mile area almost at the 00,000 mark. « Kansas City presents sound opportunity for many industries. *The cts,* as they apply to your own line of business, will be sent promptly on request.

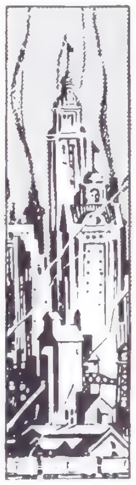
NDUSTRIAL COMMITTEE OF

THE CHAMBER OF COMMERCE

KANSAS CITY, MO.

NEW IN KANSAS CITY

Kansas City is at the crossroads of the pipelines—a new oil field activity that is investing upwards of 100 million dollars to pipe petroleum products from the Southwest to eastern markets. Kansas City is the gateway of these oil fields, just as it is the merchandise gateway to this market of one-sixth of the nation's « population, 21 million people.



INDUSTRIAL COMMITTEE,
CHAMBER OF COMMERCE,
KANSAS CITY, MISSOURI

Please send me the facts about Kansas City. I am interested in the ________________ ________________ industry.

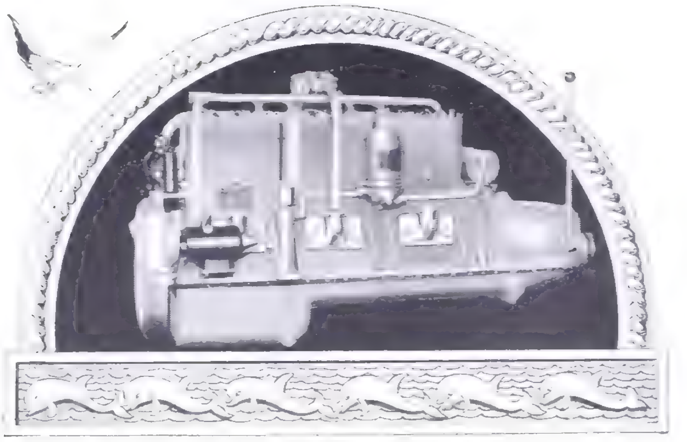
Name ________________________

Firm ________________________

Address ________________________

City ____________ *State* ____________

(I saw your advertisement in Fortune)



A. C. F.*
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GAR WOOD "40"
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LUDDCO DREAM BOATS
MATTHEWS*
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ROBINSON SEA GULL
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STEPHENS
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WHEELER "PLAYMATES" *
[illegible]
BRITISH POWER BOATS
OSBORNE-CRAFT -- *England*
[illegible]
CHANTIERS NAVAL
EXCELSIOR
[illegible]
[illegible] -- *Argentine*
*[illegible]

DEPENDABLE POWER

The wide acceptance of SCRIPPS motors by so many prominent builders of standardized craft who offer them as standard or optional equipment is significant of SCRIPPS unfailing dependability.

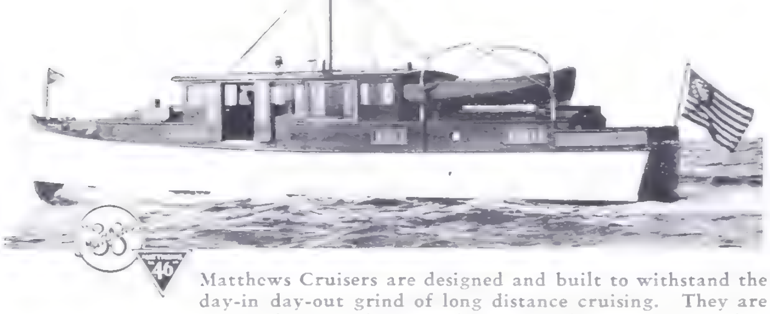
Fifteen models—15 to 200 Horse Power
High speed and medium duty.

Interesting literature will be mailed on request

SCRIPPS MOTOR CO., 5844 LINCOLN AVENUE, DETROIT, MICH.

SCRIPPS
· THE MOTOR THAT CROSSED THE ATLANTIC ·

Husky Performance
Stamps Every MATTHEWS *With the Imprint of Owner Safety*



[illegible] *today*

Matthews Cruisers are designed and built to withstand the day-in day-out grind of long distance cruising. They are extremely staunch, rugged, beautifully appointed with a world of room aboardship. Their spirited grace and buoyant riding action is a revelation in fine cruiser performance. They can be navigated and controlled by a novice . . . are dry, safe, responsive and fast. Seasoned by 39 years of boat building experience Matthews Cruisers meet every need for huskiness in a fine boat, coupled with rare good looks and unexcelled cabin luxuries. Built in 38 and 46 foot sizes with speeds ranging from 15 to 30 miles per hour, you have the liberal choice of ten trim models to match every cruising and commuting need afloat. Learn for yourself how competently a Matthews will answer every cruising emergency—fit your own ideals of desirability and privacy. Write for detailed information, or consult your nearest Matthews dealer today.

THE MATTHEWS COMPANY
Designers and Builders of Boats of Distinction . . . Since 1890
324 Bay Side Port Clinton, Ohio

The Seal and the U. S. Treasury

[*Continued from page 122*]

to the French names of the last two. Now black sells well and so does the rather light golden chestnut, but it is the logwood brown that is the delight of the men in St. Louis. The dye was developed about five years ago, and it ever increases in popularity. It is a dark rich brown (on page 71 is reproduced a color photograph of two logwood brown skins), but the panegyrics which dyers and retailers heap upon the color had best be left to them. However, if the black seal should suffer a decline, it is to the *bois de campéche* that the trade looks to provide the fillip needed to capture a public's taste.

Certainly a significant step toward popularizing the color was taken by none other than Mrs. Herbert Hoover, who herself has a *bois de campéche* seal coat, when last spring she sent ten thus-dyed Alaskan skins to Princess Marie-José of Belgium on the occasion of her marriage to Prince Umberto of Italy. That day was a great day for the Fouke Fur Company. Almost at the last possible moment had come news of the wishes of the First Lady of the Land. Ten of the most beautiful skins had to be chosen, a suitable mahogany chest was found (Mrs. Hoover would not have sent the gift had it not been properly presented). The wives of some of the officials tied the skins together with black, yellow, and red ribbons. It was a proud day for the company and a very, very happy day for the developers of the dye when the skins were finally shipped with all due formality to Marie-José-Charlotte-Sophie-Amélie-Henriette-Gabrielle, Princesse de Belgique.

The Tale of the Sultan's Wives

[*Continued from page 90*]

he started suit against the British Government and the Turkish National Oil Development Co. for $50,000,000 compensation for the Mosul oil fields. For his lawyer he engaged Alexandre Millerand, ex-President of France. Able, if less impressive, Dr. Gunsberg is now carrying on the suit, which he is prepared to take to the Hague Court if necessary. At the same time Abdul Kadir began suit against Kemal Pasha himself to recover $25,000,000 worth of crown jewels. This suit seems to have been dropped, perhaps at the request of Dr. Gunsberg, who is much too tactful a man to sue his own patients. Abdul Kadir lives in the ghetto of Budapest, where he supports a charming twenty-year old wife (and six children by former wives) on a $20 a week job in a gypsy orchestra. Prince Selim would regain his patrimony otherwise. He was reported present at the recent Kurdish uprisings, and the wild tribesmen are said to have shouted his name as a battlecry.

There is one group of princes who are living quietly in their deserted harems in Beirut and Aleppo. Unlike the energetic Abdul Kadir, they think it far beneath their dignity to accept any employment. However, they apparently have no scruples against receiving charitable donations, which is the only way they manage to keep alive. They were stirred to protest when the Syrian Government sold forty-seven villages that were once the personal property of Abdul the Damned. Like all the other heirs, however, these proud and indolent princes dream of future riches far beyond any Syrian villages. To return to the great palace at Constantinople, to live among its intricate oriental splendors once more—this is the prospect to which every heir looks forward. The nine wives especially, most of them fifty or sixty by now, look on the old royal harem as their natural abode. With palaces in Constantinople renting for $5.00 or $10 a month, a very few millions in actual cash would enable the entire family to return to the scenes of their prosperity. The skill of Dr. Gunsberg and the persistency of Ægean Trust will determine whether these millions, or perhaps hundreds of millions, will be forthcoming, whether the Tale of the Hebrew physician and the Wives of the Sultan will have a happy ending or not.

MELLOWED A HUNDRED MILLION YEARS

While scaly monsters fought in PENNSYLVANIA

WHAT makes one motor oil higher in lubricating quality than another?

For one thing, the earth conditions in the geo- gical age when the crude oil was formed. For nother, the expertness of the refining process.

For these reasons the Sinclair Refining Com- any uses only the famous Bradford-Allegany istrict crude from the Pennsylvania field in its g, new Mobiline refinery at Wellsville, N. Y.— here Mobiline is triple-filtered, and the wax emoved at as low as 60° F. below zero—thus aking it more uniform than most oils. and far ss productive of carbon.

The Bradford-Allegany crude that goes into Sinclair Mobiline was one of the few crude oils formed in the Devonian Age—a period in earth's long history when conditions of heat, pressure and materials were nearest perfect for the forming of oil. And the crude has lain there mellowing and filtering for a hundred million years—long enough to filter out undesirable compounds—long enough to bring the crude to a point where its superior lubricating quality commands the highest price of all Pennsylvania grade crude oils!

Have the nearest Sinclair dealer change your oil to Sinclair Mobiline according to the Sinclair Law of Lubrication. Examine this Mobiline after long, hard driving. Note how it stands up—how it comes out of the crankcase almost as good as it went in. Note especially how little has been used up—positive, visible proof that this rich, Devonian oil protects the last mile as well as the first!

Send our nearest office your name and address and a list of the states where you intend touring and we will send you road maps and the Sinclair Law of Lubrication booklet, free. Sinclair Refining Company, (Inc.), New York, Atlanta, Chicago, Houston, Fort Worth, Kansas City. Sinclair Refining Company of Canada, Ltd., Toronto. Sinclair Refining Company of California, Los Angeles.

SINCLAIR MOBILINE

Reg. U. S. Pat. Off. 1905

Pennsylvania MOTOR OIL

Made in the newest, largest single refinery using PENNSYLVANIA grade crude exclusively.

guaranteed by
SINCLAIR REFINING CO. INC.
to be 100% pure
PENNSYLVANIA GRADE OIL

35¢ *per quart*

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COROC

IS THE TRADE-NAME OF A VARIETY OF FINISHES FOR SPECIFIC USES, PLEDGED ALWAYS TO DO EXACTING JOBS PERFECTLY . . . AND ECONOMICALLY

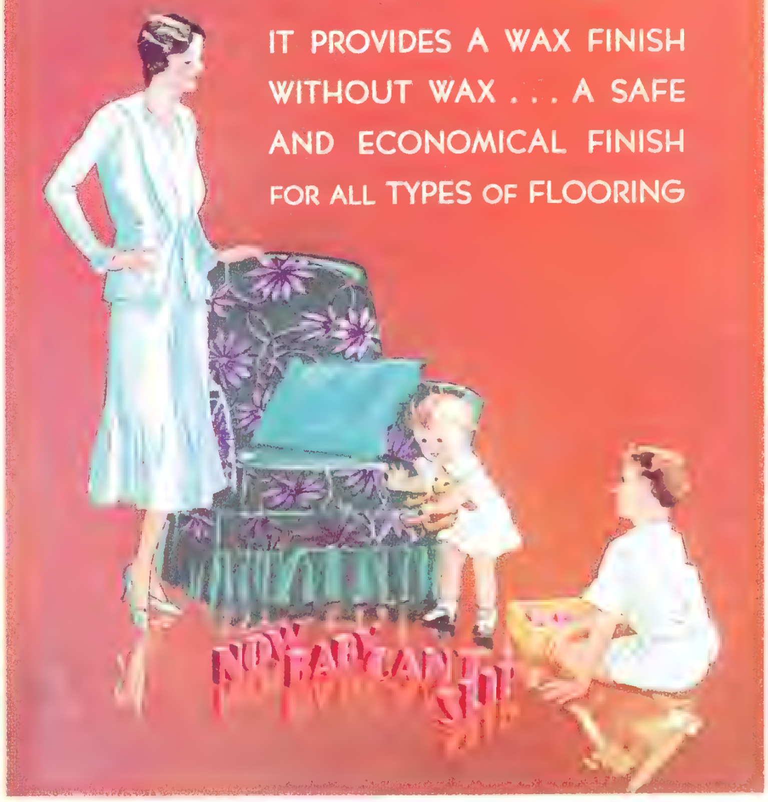
COROC

SAFETY FLOOR FINISH

GIVES SOMETHING NEW TO FLOORS:

FLOOR SAFETY.

IT PROVIDES A WAX FINISH WITHOUT WAX . . . A SAFE AND ECONOMICAL FINISH FOR ALL TYPES OF FLOORING



SAFE footing on beautifully finished surfaces—a wax finish **without** wax—is the contribution of COOK'S COROC Safety Floor Finish to modern floor treatment. It leaves a permanently hard, tough, yet elastic film on all types of flooring. ¶ COROC Safety Floor Finish is not a paint, enamel, lacquer or varnish, but something that is new, distinctively different —a finish that is waterproof, will not turn white and is resistant to mild acids and alkalies. It brushes easily and levels perfectly. It dries **in less than one hour** and remains permanently hard and tough. It is remarkably clear preserving the most delicate coloring of the undersurface. And, eliminating entirely the usual wax finish, it offers a distinct saving in finishing and maintenance cost, and creates a new advantage—**Floor Safety.** COROC Safety Floor Finish presents a beautiful wax-like appearance, but requires no finishing coat of wax, and ends the accident-hazard of slippery floors. ¶ Available in the clear and in four attractive colors. ¶ All COROC finishes are made to do a specific finishing job well. COOK'S COROC automobile finishes, aviation finishes, refrigerator finish, and others, pledge definite economy in application as a fitting companion to serviceability and permanence.

COOK PAINT & VARNISH COMPANY

FACTORIES IN CINCINNATI, DETROIT, ST. LOUIS
KANSAS CITY, HOUSTON AND FORT WORTH
. . . . BRANCHES IN PRINCIPAL CITIES

Red Shootings And Economics

CASUAL readers of news from Russia are apt to wonder, What's all the shootin' for?" Aparently the citizens of the Union of oviet Socialist Republics are being ecimated at a rate of roughly two ach day by firing squads. Ignoring uspect "dispatches from Riga," one nds 628 such executions credibly reorted from Moscow in the past welve months by the New York *Times.* Turning to the official Soviet ewsorgan *Pravda* (Truth) we read f as many as 246 executions in a ngle month. "What's all the shootin' for?"

Generally speaking the death penlty is not imposed in Russia for priate murder, but solely for crimes gainst the State which may but selom do involve a murder charge. Counter-revolution" is the Soviet mortal sin. It may mean anything rom forging food cards to selling military secrets, anything from saboaging a giant turbine to heralding the miraculous return of the Romanffs. In the Voronesh district last winter sixteen persons were sentenced o death as counter-revolutionaries or subscribing to this mystic docrine:

"We do not recognize Lenin. He is black. It is true that Tzar Nicholas is dead, but he will return from Heaven to resume his rulership over Russia."

Observe that although the sixteen ersons shot were evidently religious, heir execution cannot easily be alled "religious persecution." To asert the celestiality of Tzar Nicholas r acknowledge the divinity of Christ is no crime *ipso facto* in Russia, but he moment religious ideology shapes tself toward destruction of the State (by means natural or supernatural), he firing squad is ready.

Execution follows arrest with dizying speed. Public court proceedings, uch as the famous Shakhta Trial in 1928, are the exception, not the rule, n cases of counter-revolution. Such "show trials" are arranged as saluary spectacles, broadcast by radio for propaganda purposes. The more usual procedure is abrupt, drastic. Secret agents of the *Ogpu* ("Unified State Political Organization") merely seize and execute persons against whom they have obtained what the central *Ogpu* office in Moscow considers sufficient evidence. A report of what has been done is then transmitted for stereotyped approval by the Chief Prosecutor of the Soviet Union Supreme Court. Authority for this procedure is derived from the act constituting the *Ogpu,* ratified on October 24, 1924, by the Central Executive Committee (Parliament) of the Union of Soviet Socialist Republics.

It may be wrong for death to be thus dispensed in summary fashion throughout Russia, but it is not irregular or illegal.

Often misconceived abroad, the nationwide *Ogpu* organization is in fact a state within the State. Theoretically "attached" to the Commissariat (Ministry) of Interior at Moscow, it is actually distinct, autonomous, controlled by Soviet Dictator Josef Stalin, not through any clear channel of government but in virtue of his position as Secretary General of the all-powerful Communist Party.

Agents of the *Ogpu* are of two kinds: uniformed and un-uniformed. The former are in fact a federal police. They are the visible arm of Moscow, extended to preserve order throughout the vast Union. When a local situation in one of the "federated republics" gets beyond local control, the uniformed *Ogpu* steps in. These men are sturdy fellows, mostly recruited from the Red Army.

Vastly different are the un-uniformed or "secret" agents of the *Ogpu.* It is they who have made Soviet life a melodrama, a seesaw between farce and tragedy. That toothless old woman cringing in a corner, that blustering bus driver or the rosy-cheeked wench at your side —anyone in Russia may turn out to be a loop in the national net of espionage. The average citizen does not know, cannot know, from day to day whether his neck is safe. It is terrible, but the grave intense statesmen of Moscow, zealots who place everything else second to attainment of the Soviet ideal, will tell you that the "*Ogpu* and its methods are necessary, indeed most vital!"

Let us examine this necessity. In the first place Russians of today are without the pecuniary stimulus to work hard and behave acceptably, which Capitalism provides through a sliding scale of cash rewards. The Soviet proletarian, working as he increasingly does for this or that State monopoly, is offered much in the way of Communist precept, education, and even special privilege (free theatre tickets); but his wage scale is uninspiring, he cannot greatly better himself by individual initiative, and his tendency in many cases is toward shiftlessness. At this point the *Ogpu* jabs in its spur to duty. If a Soviet railway train is wrecked, perhaps through sheer laziness and gross negligence of all concerned, the *Ogpu* at once pounces upon this "counter-revolutionary plot." Had the railwaymen been conscientious Communists, tireless zealots like Josef Stalin and others at the top, obviously the accident would not have occurred. Fear of death may sometimes make for efficiency. It is a fact that in Soviet train wrecks, sympathy is seldom (as in the U. S.) with the engineer. Russians are being trained to demand stern accountings—even the uttermost penalty—from sluggards, stupid or careless defeatists of Dictator Stalin's great Five Year Plan to industrialize the Red State.

Of course there are genuine cases of counter-revolution, genuine unmaskings by the *Ogpu* of Polish and Rumanian spies, genuine discoveries of plots by the "Fists" (rich peasants) to assassinate hated Soviet officials in this or that village. But paramount is the fact that Russians are being herded today down a hard road, a road to the Soviet utopia which not all will take without Death's spur and sting.

Rockefeller Builds Again

ONLY the most stubborn memory still connects the Rockefellers with their home city. For many years John D. Rockefeller Jr. has made it clear that he considers himself a New Yorker rather than a Clevelander. His benefactions to his home town have been as nothing compared to such gifts to the city of his adoption as the Riverside Church or proposed radio center on Fifth Avenue. The Rockefeller Foundation is planted along the East River waterfront of Manhattan, the Rockefeller estate spreads over suburban Pocantico. There is, therefore, an element of surprise in the news that the Junior Rockefeller has for five years been planning a model community of the 400 acres of Forest Hill, the old Rockefeller estate in Cleveland. That he has, furthermore, already spent $6,000,000 on it and that he intends to spend $75,000,000 by the time the project is completed. The private links where John D. Sr. played golf and the lake where John D. Jr. learned to swim are both incorporated into the plans. This is indeed a Return of the Native.

The Forest Hill development is unusual in many ways. For one thing it has been worked out with typical Rockefeller precision. Architects and engineers, directed by Andrew J. Thomas, worked over blueprints for two years before a spadeful of earth was turned. Water, gas, sewer, and electricity lines were laid for the entire community before a house had been completed. Though only eighty-one of the projected 1,000 houses are finished to date, eleven miles of streets have already been paved. Most real estate promoters work in precisely the reverse order: no streets and sometimes no power and water lines until the houses are slapped together. The comparison is valid because Mr. Rockefeller is a promoter and not a philanthropist in this project. These are not model tenements for the deserving poor. They are extremely attractive individual homes, to be sold to young executives and professional men at $25,000 apiece. And Mr. Rockefeller expects to make a fair profit from the first mortgages he holds on the properties.

Most unusual feature of all is the happy relation of Mr. Rockefeller with the building unions. As every employer knows, no type of unions is more self-assertive and intractable than those in the building trades. Mr. Rockefeller, however, sent his Architect Thomas to talk the whole project over with the head of the Ohio Federation of Labor. This simple gesture made a deep impression on the labor chief, who speaks of it with enthusiasm: "It was a new idea to me to have the representative of so wealthy a man express a desire to coöperate with union labor's goal." The harmonious relations of Mr. Rockefeller and the 1,300 workmen on the job have inspired the leader to say, "We have got the job along without a single strike and without having a man killed on the job. I don't believe a like spirit ever existed on any building operation anywhere. Not a man has had to be discharged for not giving a full day's work."

The Month's Theorizing

AMONG the more interesting economic theories to be expounded during the month were two as follows:

Every corporation knows well the danger that lies in frozen inventories—great mountains of goods or raw materials laid up in the corporate barn with no harvest home in sight. But not every corporation recognizes the danger in "frozen cash." On the contrary, a corporation whose balance sheet reveals a strong cash position is much envied, and one of the chief aims of corporate management these days is to pile up as big a cash surplus as possible.

Kenneth C. Hogate, general manager of Dow, Jones & Co., had somewhat to say on this subject to the members of the Cleveland Stock Exchange not long ago. Vigorously he expressed a novel and highly interesting viewpoint about what he called "the sacred corporation surplus":

"The fetish of a corporation surplus today stands in the way of a revival of prosperity . . .

"It is also extremely doubtful if such an abundance of cash items works to the benefit of the stockholder . . . In periods of declining business, corporations forget that this money belongs to the stockholder. When earnings recede, they cut and pass their dividends quite as frequently as their poorer cousins. When times are booming, they use this surplus to lend for exorbitant rates or tend to careless expansion of productive facilities which often soon prove superfluous.

"As to the claim that such surplus is the backlog for an emergency, the answer is that we have been and perhaps still are in an emergency. Meantime these great surpluses lie quiescent. They are not actively working for the early return of prosperity.

"It can only doubtfully be maintained that the existence of a large cash surplus reinforces the position of a corporation. Conspicuous among the large cash balances of 1921 are those of companies which have made little or no money since. Conspicuous among the modest cash balances are those of American Smelting, du Pont, International Harvester, J. I. Case, and Westinghouse. Certainly these companies have overcome this 'handicap' and profited exceedingly.

"It is a fallacy to regard cash as a substitute for management or as a magical medium for creating business with a product which has not been kept up to date or which is inadequately merchandised. On the contrary, a strong cash position tends to create a feeling of security on the part of management which may result in a diminution of enterprise and slothfulness of action.

"If the corporations of this country would disgorge themselves of their surplus cash and pay it to its rightful owners — the stockholders — a sum which might approach $4,000,000,000 would flow into the channels of trade and frozen cash would be put to work for the alleviation of unemployment and the stimulation of business."

. . .

Rudolph Spreckels, hard-hitting, individualistic California sugar magnate, has laid the cause of the business depression squarely at the door of the Federal Anti-Trust laws. He has publicly stated what many business leaders have long felt to be the case: that in an era when production facilities far outstrip consumption, the old shibboleth about competition being the life of trade no longer holds true. The Anti-Trust Laws, however, still operate on that theory. Hence small independent manufacturers are handicapped because they cannot talk over merchandising problems with their competitors. The trade association is the remedy, but "unfortunately, only tentative approval of the plans of a trade association can be given by our governmental departments; and after they are formed, trade associations are immediately confronted with an attitude of suspicion by departmental investigators."

It is quite true that the 13,000 trade associations now existing in the U. S. are in an anomalous position. They are never quite sure whether they are violating some provision of the Anti-Trust Laws or not. Mr. Spreckels proposes that they be exempted from the operation of these laws. Farmers, ranchers, and dairymen are encouraged by the government to form coöperatives; labor is allowed to combine in trade unions; the I. C. C. Railroad Consolidation Plan does not scruple to eliminate competition; small banks are allowed to group themselves in extensive chains. There seems to be no good reason why governmental tolerance should not be extended to include the trade association.

Mr. Spreckels goes farther than this, however. He wants the government to regulate competition as it did during the War: by giving each company a certain proportion of the total production and by fixing prices. In a word, he would have the government do for the various manufacturing industries what this summer's conferences did for the nitrate industry. The great objection to this is the changing tastes of the public, which make it next to impossible to regulate production with any degree of permanence. More immediately practical is the plan advocated by Nathan B. Williams, Washington lawyer: that the government set up in various industries advisory councils whose members would be partly representatives of the associations and partly governmental officers. Such councils would help the government arrive at a conclusion on the industry's problems, whether of tariff, labor, or competition. Trade associations would be recognized as valuable allies to governmental regulation of industry.

RCA Victor Gives Jobs

THE most casual newspaper reader must be aware by this time of two things: that Camden is now one of the world's great centers of radio manufacturing and that Camden has been offering thousands of jobs during the last few months. The first of these impressions is accurate, but the second needs to be taken with a certain amount of salt. From the newspaper accounts this salt has been conspicuously lacking.

"There is nothing wrong with the country or business today except lack of confidence . . . As a result of the depression we found ourselves early this year with a skeleton organization of less than 4,000 people. Today we have on our pay roll 22,000." Thus President Edward E. Shumaker of RCA Victor. This is all true, but it is not the whole truth. The fact is that by no means 18,000 men received *new* jobs at the RCA Victor Camden plant. On January 1 there were amalgamated the radio engineering, research, and manufacturing departments of General Electric, Westinghouse, and Victor, and the selling department of RCA in the RCA Victor Co. The old Victor plant at Camden was expanded to absorb the radio manufacturing of both Westinghouse and General Electric. The plants these companies had operated were closed down, and all operations were centralized at Camden. Such employees at these plants as could afford it moved to Camden and took jobs there. Those who could not make the trip were simply out of a job. Therefore, this increase in the RCA Victor pay roll was to some extent a great game of stage-coach in which many employees moved up into jobs they had already held or indeed moved out of the game altogether.

The grain of salt with which one receives the 18,000 increase should not be too large, however. In August and September all radio companies start taking on men because theirs is a business which reaches its peak at Christmas. So a certain per cent of the jobs are new, if temporary. And, there *is* a real increase in the radio business. General Electric and Westinghouse, which never before sold radios, have begun selling them. And both receive their sets from RCA Victor. Though the increase in receiving set production from these two new selling outlets is at present more of a talking point than a reality, it is RCA Victor that will eventually benefit from such an increase.

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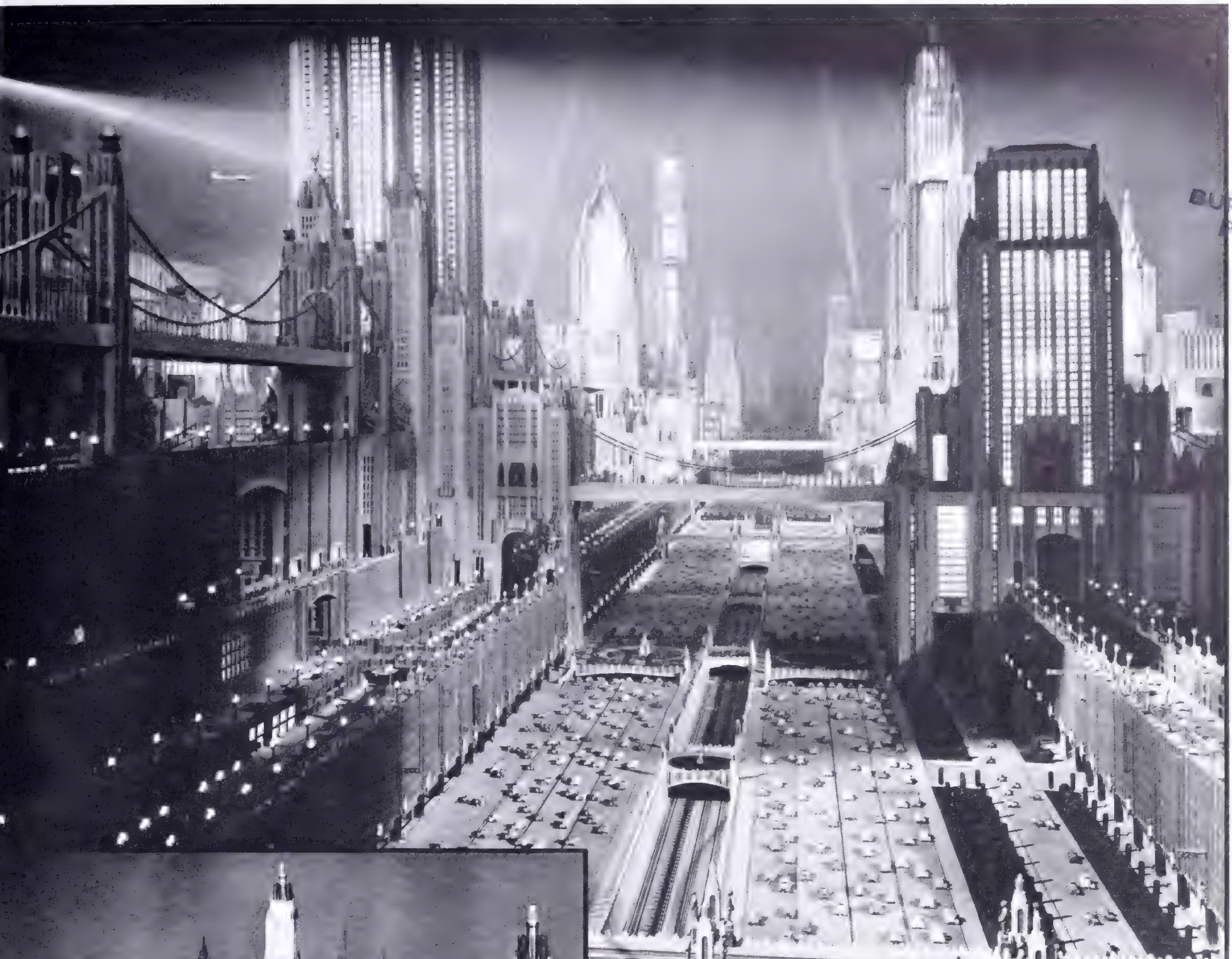
Courtesy Camden Courier Post

THE RCA VICTOR PLANT AT CAMDEN RUNS ON NIGHT SHIFTS



BURLINGAME PUBLIC LIB.

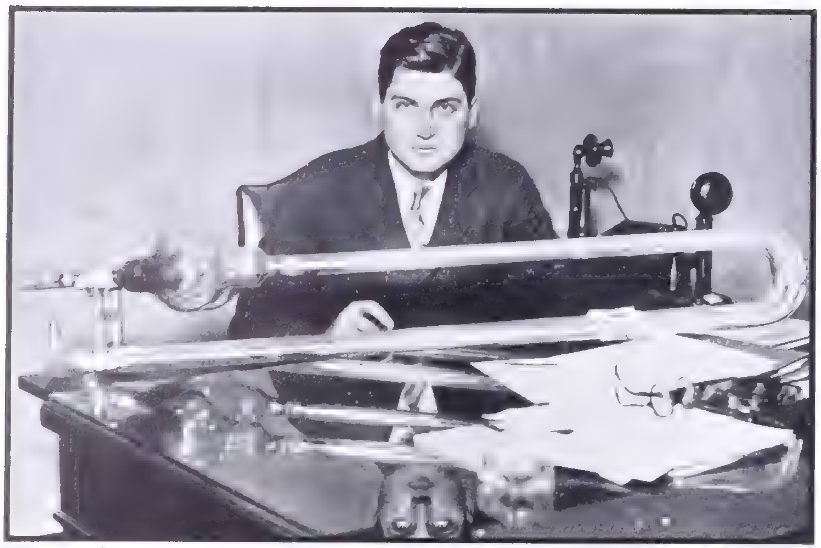
Photos Courtesy Fox Productions

The Cinematic City of the Future

MANY a Sunday Supplement artist has made a good living by sketching out his ideas on how New York or Chicago will or should look fifty or a hundred years from now. In more distinguished manner, Hugh Ferriss has drawn us the City of the Future from every conceivable angle. It has remained for the cinema, however, to materialize such a city in plaster and cardboard, if not in brick and stone. The model shown here will go down in cinematic history together with the Cathedral of Notre Dame and other famous sets.

This vast, complex, and highly spectacular metropolis was built by two men in the art department of Fox Films: Stephen Goosson and Ralph Hammeras. It figures in *Just Imagine,* a newly released musical comedy by that most famed of song-writing corporations: De Sylva, Brown & Henderson. Life in 1980 is the theme of the picture which, except for this remarkable model, is not inspired. The model represents a New York City with towers 250 stories high, rocket plane traffic directed by policemen in captive balloons, and nine levels for terrestrial traffic. Futuristic automobiles dot the eight-laned central boulevard. Messrs. Goosson and Hammeras had several hundred assistants in the actual construction work on the city. The total cost is $250,000 (movie money).

Faces of


International

The snaky spirals of glowing glass that advertise a thousand and one products on the streets of American cities after dark are the product of no single inventive mind. Outstanding among neon developers is Raymond R. Machlett (left), who devised a pioneer commercial luminous tube sign when he was twenty-six and who now at the age of thirty announces that he has developed a neon lamp that lights a 220-volt current as against the 10,000 volts necessary to light present neon tubes. This means that Inventor Machlett has brought the neon light out of the street into the drawing room, for 220 volts is the usual domestic voltage.

Wide World

At the head of the currently booming RCA Victor Corp. (see page 128) is Edward E. Shumaker, tall, spare, and Pennsylvania Dutch.

International

From *Louis Seize* to *Art Moderne* range this fall's Minerva cars under the versatile direction of Paul Ostruk, who heads the American end of the company. The former are completely *Louis Seize* on the interior and as faithful on the exterior as engines, gasoline tanks, and such anachronisms will permit. Minervas are specially built, as the car Adolph Lewisohn ordered last year with a card table and sleeping quarters in it. Mr. Ostruk's company has made no less than fourteen Minervas for his great and good customers, the du Pont family.

Theodore Haley

"There are 19,000,000 homes wired for electricity in the U. S. today . . . With an average of four clocks to the home, this represents a rapidly growing market of more than 75,000,000 clocks at an average retail value of $10." Thus Richard H. Whitehead, president of the New Haven Clock Co., which has been making clocks since 1817, whose net sales last year were $4,067,000. No idle prophet is Mr. Whitehead, for the vogue of the electric clock is undoubtedly on the up curve. Aggressive names in the field: Warren Telechron Co., Hammond Clock Co.

The Phillips Studio

Chairman (for arbitration) of the Men's Clothing Industry in New York City and head of the industry's unemployment fund is Jacob Billikopf, noted Jewish social worker. The fund, he announces, has paid out $250,000 to unemployed workers so far this year and expects to pay more. Established by mutual agreement between employers and workers, the fund consists of 1½ per cent of the pay roll. Chicago and Rochester have similar funds. Mr. Billikopf declares that after this year's expected $1,500,000 disbursements, all three funds will remain solvent.

Blank & Stoller

The merger of H. K. McCann Co. and Erickson Co. creates what is at least the fifth biggest advertising agency in the land. Harrison King McCann, founder of the McCann agency, is president of the new company. Accounts merged by the deal include Valspar, Bon Ami, Dictaphone, Congoleum-Nairn, Beech-Nut, and many a Standard Oil Company.

Keystone

That the Bank of France has the enormous sum of nearly $2,000,000,000 in gold locked in its vaults, that the franc is now as firmly stabilized as the pound or the dollar is due chiefly to the moral leadership of Raymond Poincaré and the financial talents of Emile Moreau, since 1926 governor of the Bank of France. M. Moreau (left) is now resigning his post. His work is done. He has been promoted to Grand Officer of the Legion of Honor, a distinction that is the climax of official careers in France. By no means is he retiring, however. For the first time in his long career he leaves state finance and enters private banking: he becomes president of the powerful Banque de Paris et des Pays-Bas. The new governor of the Bank of France is Clément Moret (right), who has been in state finance for twenty-two years and who has been assistant governor since 1928. Trained in the same financial tradition as M. Moreau, Governor Moret is expected to carry on much the policies of his illustrious predecessor.

© *Keystone*

The Month

P. & A.

While John D. Rockefeller's new $6,000,000 Riverside Church in New York held its first service, not far away Bishop William T. Manning preached in the still incomplete Cahedral of St. John the Divine. He aid that $10,000,000 would be needed for completion. His justificaions of this expenditure: (1) nearly ll the building fund goes for labor; (2) the cathedral "will be a mighty nfluence for fellowship and unity"; and (3) "This cathedral stands for he presence of Almighty God."

Underwood & Underwood

Sir Percy Bates, Cunard chairman, announces that his line is building two "very large and very fast" steamers. At the same time he points out that these are "the smallest and slowest" that can possibly meet North Atlantic competition. Anything larger Sir Percy feels would be "extravagant," anything smaller "incompetent."

"I now pronounce this stone well and truly laid," piped five-year-old Kenneth Straus, grandson of Jesse Isidor Straus, president of R. H. Macy & Co., a few seconds after this picture was taken. The cornerstone he so well and truly laid was that of an addition to Macy's that will make it the world's largest retail store under one roof. While his grandfather held him, young Kenneth applied mortar with a small silver trowel. It was the same one his father, Jack Straus, now a Macy vice president, had used in 1902 when he laid the cornerstone of the original Macy building for *his* grandfather.

International

Wide World

Two leading builders of industry, one in copper and one in steel, have been overtaken by death. Henry Phipps (left), founder of the Phipps steel fortune, with Carnegie and Frick formed the triumvirate that built up the U. S. steel industry. Had he lived five more days he would have seen his ninety-first birthday . . . The Guggenheims lost their patriarch when Daniel Guggenheim (right) died at the age of seventy-four. He was a great copper man and the founder of the Guggenheim aviation fund.

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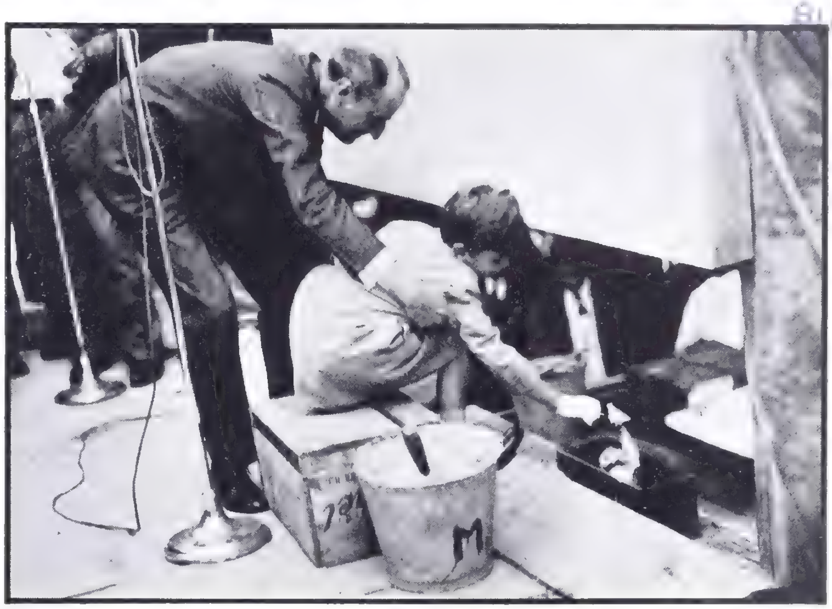
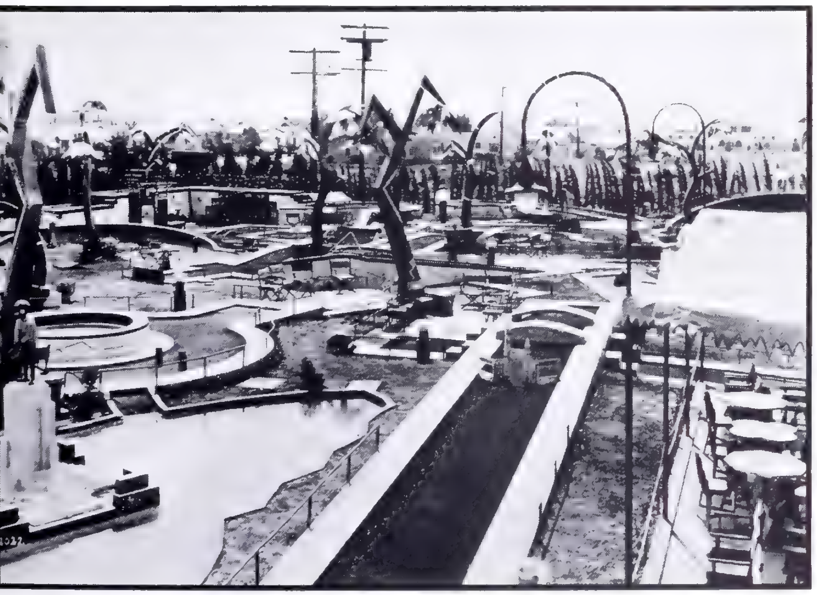


P. & A.



nternational

International

As the Tom Thumb golf craze runs its appointed course, it inevitably goes to Hollywood for its most extreme expression. On the left is the futuristic course on which Mary Pickford has spent $50,000, about twenty-five times he average cost. Mary, who has one of the smartest business heads in Hollywood, expects to make money on her investment. The course is located on some Pickford property at the busy intersection of Wilshire and La Cienega Boulevards. Opening night charges were $5.00 a round, in view of the fact that both Mary and Doug were playing the course. Tom Thumb business in general is going into a seasonal decline according to National Pipe Products Corp., which has made almost all the 35,000 courses now in existence. United States Miniature Golf Housing Corp., has been formed for the manufacture of a standardized steel and glass enclosure to make the courses weatherproof . . . Into the chill waters of Chesapeake Bay recently slid a coffin bearing the remains of Mr. Business D. Pression. Governor Pollard of Virginia officiated at the mock burial whereby the citizens of Norfolk, Virginia, hoped to rid themselves of Mr. D. Pression psychologically if not in actuality.

P. & A.

Louis Shattuck Cates, *born on December 20, 1881, in Boston, Massachusetts, now of New York City*

Strauss Portrait

Col. Albert Thompson Perkins, *born on October 2, 1865, at Brunswick, Maine, now of St. Louis*

American Photo Service

Gerhard Melvin Dahl, *born on June 8, 1876, at Fort Howard, Wisconsin, now of New York City*

Underwood & Underwood

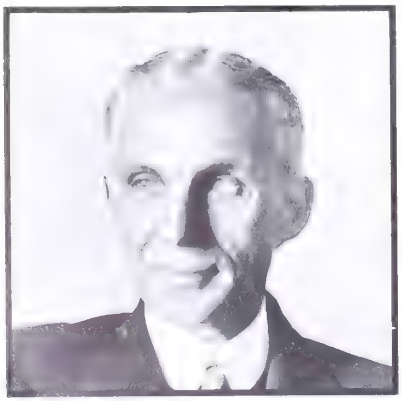
Francis Hinckley Sisson, *born on June 14, 1871, in Galesburg, Illinois, now of Yonkers, New York*

© Underwood & Underwood

Col. Albert Arnold Sprague, *born on May 13, 1876, in Chicago, Illinois, now of Chicago*

Underwood & Underwood

Nicholas Roosevelt, *born on June 12, 1893, in New York City, now of Budapest*



Underwood & Underwood

Henry Ford, *born on July 30, 1863, at Greenfield, Michigan, now of Dearborn, Michigan*

Keystone

Nicholas Schenck, *born in 1890 in Russia, now of Great Neck, Long Island*

Career Milestones

¶To be elected president of a copper company in these days of ten-cent copper might appear more of an honor than pleasure. When Louis Shattuck Cates became president of Phelps-Dodge Corp. this spring, however, he took the helm of very nearly the only big copper company that has not cut its dividend. Now comes the climax in Phelps-Dodge's, and Mr. Cates's, current career: the taking over of National Electric Products, a manufacturing company which can fabricate 200,000,000 pounds of copper a year. Thus Mr. Cates has witnessed a rapid vertical expansion of Phelps-Dodge in the few months since he has taken office. It is not the first time he has seen a copper company expand. When he came into Phelps-Dodge last spring, he left mighty Utah Copper Co., which he had seen shoot up into record production under Daniel Cowan Jackling [FORTUNE, April, 1930]. Back in 1904, two years after his graduation from M. I. T., he had gone out to Bingham, Utah, to work for a copper company. Inevitably he had been drawn into the Jackling orbit. Inevitably, in view of his personal qualities, he had become general manager of Utah Copper, Mr. Jackling's right-hand man and close friend. His steady good nature (he listens carefully to all sides of a question, speaks slowly, never becomes excited) has made him one of the most popular men in his industry. He is a Shriner. Solidly built and a great outdoor man, he did much of his general managing at Bingham from the back of a horse.

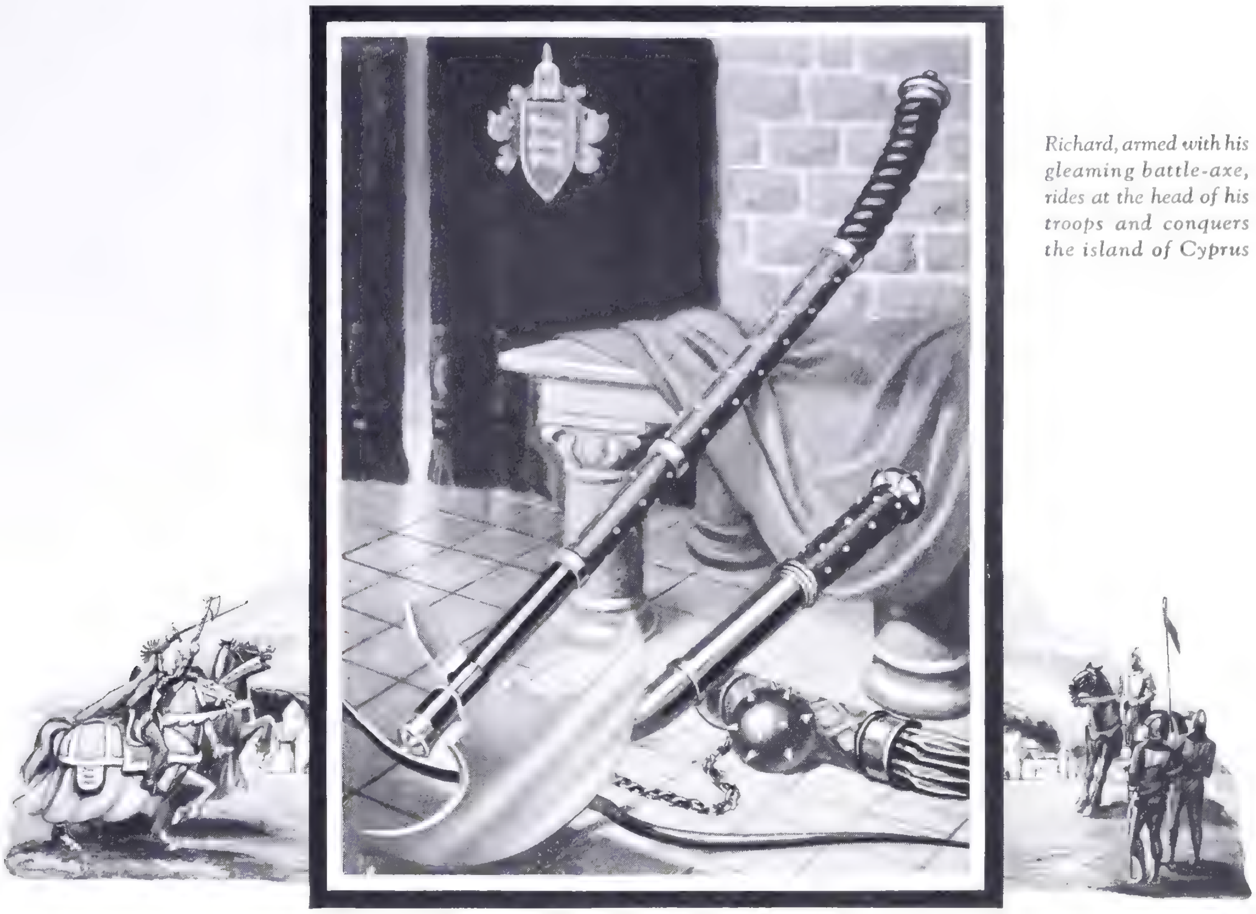
¶The new president of the board of overseers of Harvard College is Colonel Albert Thompson Perkins of St. Louis, Harvard, 1887, *magna cum laude,* Distinguished Service Medal, Order of St. Michael and St. George, and now president of the Apalachicola Northern Railroad. He is a railroad expert whose advice is often asked and who played a major part in the reorganization of St. Louis's street car lines. He has been a member of Harvard's board of overseers since 1925.

¶The election of Gerhard M. Dahl to the chairmanship of the $460,000,000 Interborough Rapid Transit Co. makes him dictator of New York City's vast system of subways and elevated railways. For some time he has been chairman of New York's other big traction company, the Brooklyn-Manhattan Transit. Blue-eyed and forceful, he began his career as corporation counsel of Waupaca, Wisconsin (population: 3,000). He first demonstrated his flair for managing street railways in Cleveland, where he delighted the late great Mayor Tom Johnson by running the city's street cars on a three-cent fare. He has been a vice president of both Electric Bond & Share and Chase National Bank and a partner in Hayden, Stone & Co. The receivership of the old Brooklyn Rapid Transit Co. in 1922 brought Mr. Dahl into the company's affairs as the traction expert of Chase National. After he had reorganized the company as the B.M.T., he would normally have drifted out of the picture, as he had in New Orleans a few years before. But a fight with the city administration began, and he stayed on to see it through. Then arose the question of unification of the B.M.T. with the new municipal lines, and Mr. Dahl definitely took the helm of the company. The interference of the I. R. T. in his plans made him so angry that he fought his way into the chairmanship of that company as well. The issue on which his group now dominates the I. R. T. is unification—which they favor, providing the city pays their price. With both companies united under hard-fighting Mr. Dahl, this is more than a possibility.

¶The president of the American Bankers Association in 1932 will be Francis Hinckley Sisson. Long known to every banker in the land as the mouthpiece of the Guaranty Trust Co., of which he is vice president, Mr. Sisson is exceptionally well qualified for his new post. His fame as an after-dinner speaker is equaled in Wall Street only by his standing as an authority on big league baseball. A man of ideas, the star-encircled mountain peak that trade-marks Paramount movies is credited to him, as is the naming of many a limited train. He was a pioneer in bank advertising before bankers knew what it was all about.

¶ Anti-crime crusades are almost as epidemic in Chicago as crime itself. The latest crime committee to be organized, however, lists such impressive names as Fred W. Sargent (Chicago & Northwestern Ry.), Melvin A. Traylor (First National Bank of Chicago), Julius Rosenwald. Actively in command is brusque, pleasant-faced Colonel Albert Arnold

[*Continued on page 135*]



Richard, armed with his gleaming battle-axe, rides at the head of his troops and conquers the island of Cyprus

Battle-axe of Richard. Painted by Ludwig Gassner

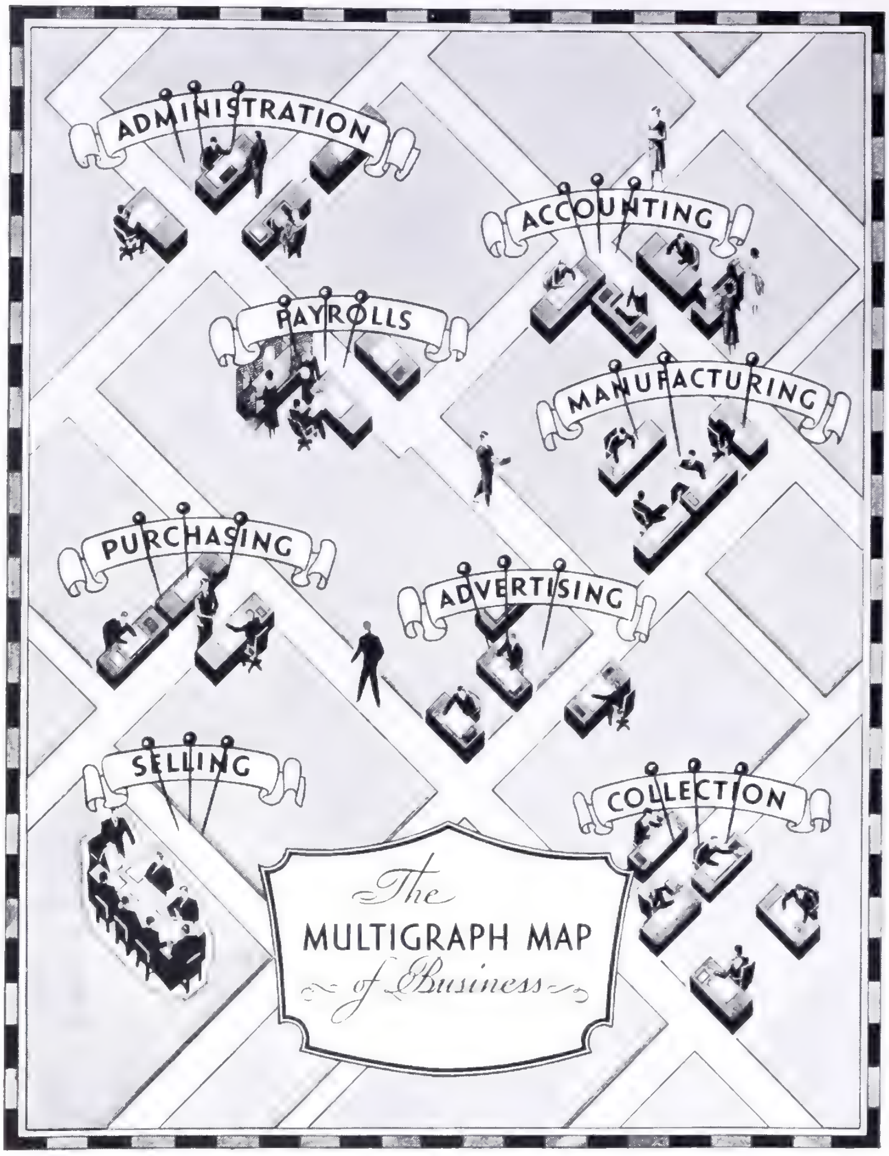
PREPARING *for New Business Conquests*

When Richard The Lion Heart rode forth at the head of his conquering crusaders, armed with equipment of steel — it was expertly fashioned, keen and efficient. Business executives today employ steel, scientifically designed and built by Lyon into modern storage and display equipment, to hasten business conquests by lowering handling costs, saving time and labor, speeding sales and service. ¶ Lyon Steel Equipment has added a new efficiency, a new economy to the business operations of stores, factories, schools, warehouses, shops, clubs. Years of designing and manufacturing experience are back of every Lyon product — each item is proved by test to be ideally adapted to its particular purpose. Turn to Lyon for steel lockers, store fixtures, cabinets, shelving, display cases and counters, storage bins. Lyon Steel Equipment is easily installed, easily moved, and easily kept clean and bright. Adaptability is combined with strength, durability with economy. The first cost is surprisingly moderate — the upkeep cost is negligible. May we mail you our latest catalog — or send a well-informed representative to show you how Lyon Steel Equipment will fill your specific needs? We will welcome your inquiry.

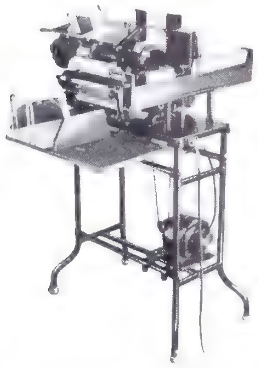
LYON

LYON METAL PRODUCTS, INCORPORATED
Converters of Sheet Steel into Practical Conveniences
AURORA, ILLINOIS
Branches, Jobbers and Dealers in All Principal Cities

STORAGE AND DISPLAY EQUIPMENT IN STEEL
STORE FIXTURES : COUNTERS AND SHOW CASES
SHELVING · LOCKERS AND CABINETS
FOLDING TABLES
AND CHAIRS



Every tack you put in this map puts money in your pocket



The Addressing Multigraph writes the letter, fills in an exactly matched name, address, and salutation, adds a facsimile signature, and addresses the envelope, all at one revolution of the drum.

Many an executive would get a new picture of what the Multigraph means to his business if he kept a map-tack record of Multigraph activity—a map of the business, including every department; a tack for every job done with Multigraph equipment.

Every tack added to the Multigraph map of any business means added profit either in ability to make more profitable selling contacts or in reducing the cost of forms, circulars, bulletins, stationery, and other printed matter.

Business today is constantly discovering new ways to use the adaptability and simplified economy of the Multigraph and allied equipment. At one point it speeds the handling of complicated production orders. At another, it cuts costs of producing sales literature. At still another, it helps to apply selective selling and reduce sales expense.

Let a Multigraph representative tell you how concerns in your own business classification are using the Multigraph to meet present-day business problems.

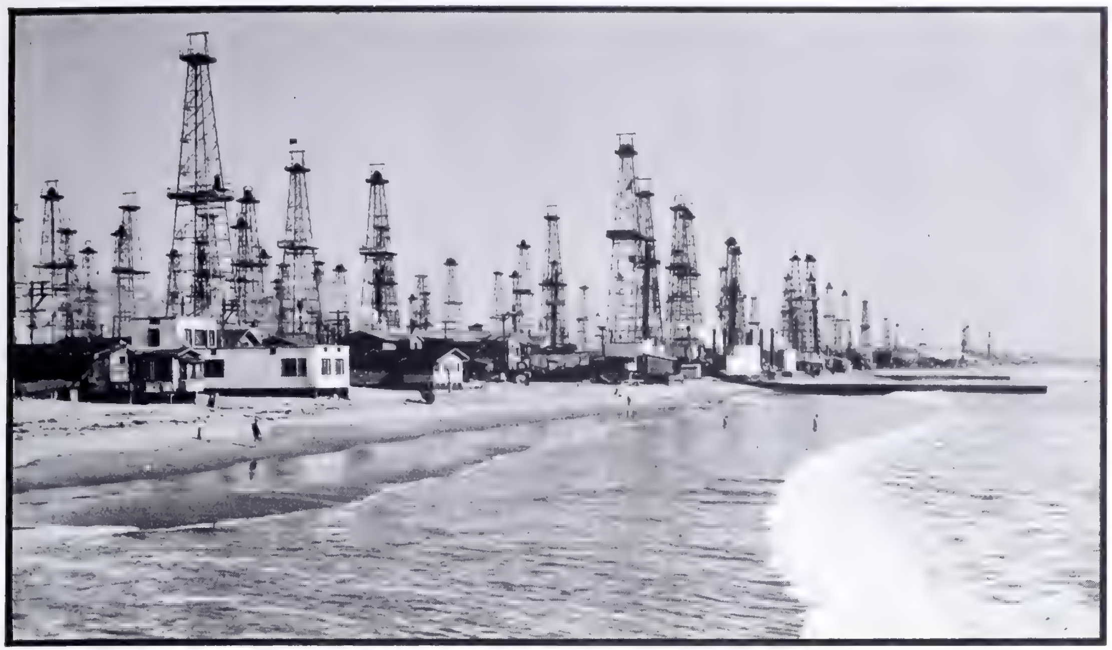
THE AMERICAN MULTIGRAPH SALES CO.
1834 East 40th Street Cleveland, Ohio
THE AMERICAN MULTIGRAPH SALES CO., LTD.
137 Wellington Street, West, Toronto, Ont.
(or consult your telephone directory)

The American Multigraph Sales Company,
1834 East 40th Street, Cleveland, O.

Please mail us copy of your check list guide to Multigraph uses—"33 Ways."

Name ______________________________
Business ___________________________
City _______________________________
State ______________________________

The MULTIGRAPH



International

Oil in Venice

THE city fathers of Venice, noted California beach resort, have struck oil—as the panoramas above and below indicate. Venice is the latest in the long list of California towns that has sprouted overnight a lusty crop of derricks. About 200 wells have been drilled by the Ohio Oil Co., the Barnsdall Oil Co., and over 100 smaller companies. With each well costing from $55,000 to $75,000 to drill and with 5,000 engineers and drillers working in the field, well over $10,000,000 has been sunk in the field to date. A new well is being opened up almost every day. Within a month, production will probably reach 50,000 barrels daily. At present Venice is producing 20,000 barrels, which puts it ninth among the state's oil fields, immediately after famed Kettleman Hills. The first seven: La Basin, Santa Fe Springs, Long Beach, Midway-Sunset, Ventura Avenue, Elwood, Huntington Beach.

Many a family from near-by Los Angeles spends the summer at Venice. There, too, is the flaming pink stucco villa of Cinemactress Mae Murray, who welcomes the oil, and the more conservative house of Cinemactor Lewis Stone, who doesn't. Displeased by the purplish oil which iridescently floats on the water, he has secured an injunction against all drilling below the high water mark on the municipal beach. His attitude is that of the wealthy and finicky inhabitants of Santa Barbara, who forbid drilling except in certain limited zones of their city. But oil has so far most considerately avoided Santa Barbara. The inhabitants of Venice (except for Mr. Stone) are plebeian enough to welcome the coming of the derricks.

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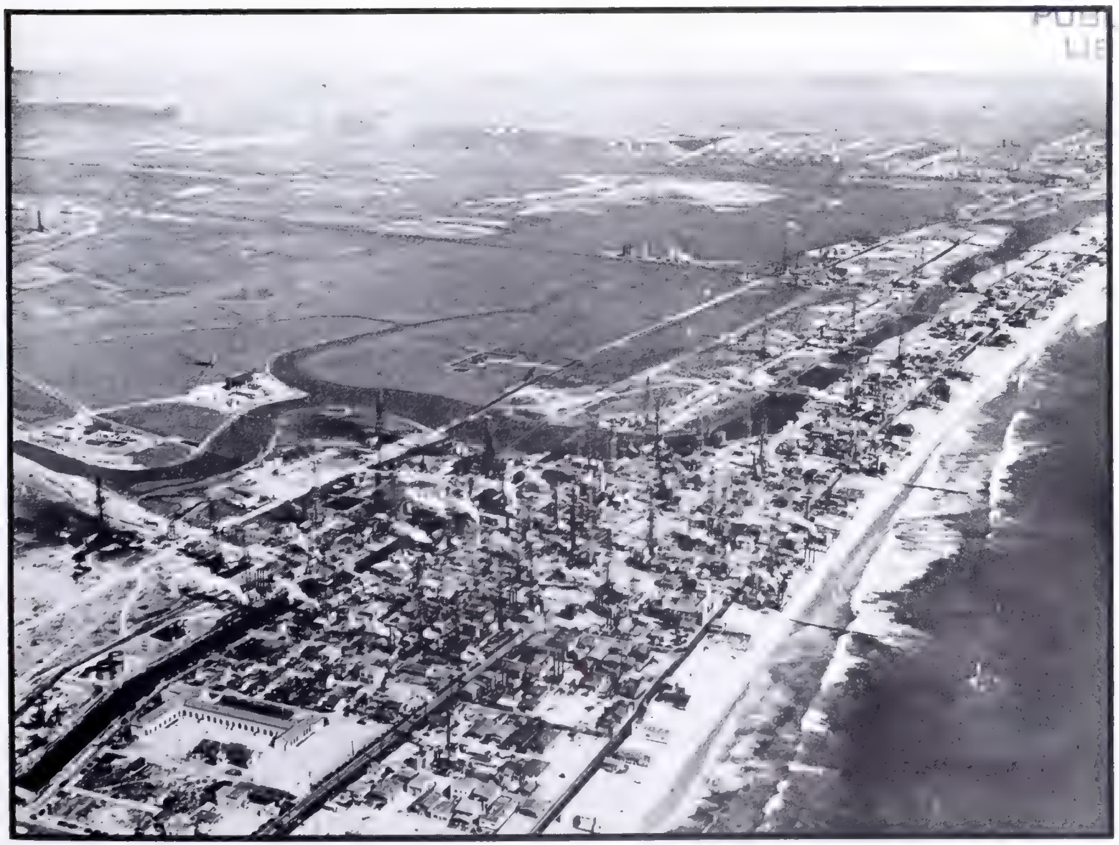


Courtesy Barnsdall Oil Co. of California

Career Milestones—*Continued*

Sprague. Before he entered public life he was board chairman of Sprague-Warner Co., wholesale grocers, and he is still a director. He fights crime from a small oak-paneled room in the Sprague-Warner offices, where he receives a steady stream of visitors. He has a house in wealthy Lake Forest and an apartment in town. His daughter Laura is one of the loveliest girls in Chicago's younger set. A War veteran who talks well about the War, he says of his anti-crime work: "This is just like war."

¶ Nicholas Roosevelt is stocky, dark, genial, and excessively fond of two things: music and Krazy Kat comic strips. He is a notable advocate of U.S. imperialism, reasoning that since this country has become an imperial power, it is high time our foreign policy should recognize the fact. In several books, including the famed *The Philippines: A Treasure and a Problem*, Mr. Roosevelt has expounded his realistic point of view with the vigor that characterized the late great "T. R.," of whom he is the third cousin. His recent appointment as Minister to Hungary means not only that he has turned from journalism to diplomacy but also that a thorough-going realist has entered the foreign service.

¶ To Americans, Henry Ford is a legend. To Europeans, he is royalty. Such at least is the impression one gathers from the accounts of his latest trip abroad. His progress through the capitals of the Old World speedily ceased to be a private business and pleasure trip and became a public journey marked with all the staring, awe-struck crowds that attend on royalty. The Hitlerites asked him to endorse their cause (and contribute 20,000,000 marks) while he was in Munich. At Oberammergau, where he saw the Passion Play and gave an automobile to Anton Lang, the villagers followed him about the streets. The remarkable Ford career has evidently reached a point where Mr. Ford can indulge himself, any time he pleases, in a luxury open to few, if any, great industrialists: a triumphal tour of Europe.

¶ When cinema magnate emeritus William Fox bought control of Loew's (which owns Metro-Goldwyn-Mayer Corp., plus many theatres) last year, it was one of the shrewdest deals he ever made. For the Loew's net income has been increasing steadily: from $6,737,000 in 1927 to $11,756,000 in 1929. Chief roller-up of profits for Loew's has been President Nicholas Schenck, who heads as smart a management as there is in show business today. He is the brother of Joseph Schenck, who married Norma Talmadge and who now heads United Artists. Joe and Nick started out as newsboys, rose to become partners of the late Marcus Loew in building up the Loew theatre chain. Nicholas Schenck is "Mr. Nick" to his office boys and stenographers. Unlike his more spectacular brother Joe, he does not relish the limelight. His chief business asset is a flair for picking box office successes. The Loew theatres have prospered greatly of late. President Schenck is expected to report for the fiscal year ended August 31, 1930, a net of well over $14,500,000—a profit which must be a milestone in any executive's career.

A Crusade Gets Under Way

TO DO away with prohibition is the aim of the 20th century Crusaders. The movement, headed largely by able sons of able fathers, has gained over 70,000 members since it was inaugurated a year ago last June at an extremely wet dinner in Cleveland's Hollenden Hotel. Since that celebrated party, however, the Crusaders have grown considerably more earnest and less convivial. At current Crusaders' dinners, no liquor is served.

Most of the 70,000 members of the Crusaders are young. Although the organization itself needs funds, its principal chiefs represent the second or third generations of great American fortunes. On this page are pictured six such young men from the Middle West, whose inheritance derives from banking and meat-packing and steel. Of the Easterners, the names of Whitney, Sabin, du Pont and Cassatt are self-explanatory. Mr. Boeing is perhaps the most distinguished Crusader in his own right. In the Crusaders these heirs-apparent have found the medium for their first major public activities. They have just launched a great membership drive in the key city of New York, and this winter is to see the extension of the movement into every congressional district, pointing toward the 1932 election. Among the leaders, militantly dubbed Commanders, these are noteworthy:

Blank & Stoller, Inc.

WILLIAM H. MITCHELL, *Harvard, 1919, son of the late John J. Mitchell of Illinois Merchants Trust Co. Mitchell, Hutchins & Co., Chicago brokers.*

P. & A.

(LEFT TO RIGHT) CHARLES H. SABIN JR., FRED G. CLARK, JOHN S. WILLIAMS—*Clark (commander-in-chief) is Kenyon, 1913, and president of Fred G. Clark Co. (Hyvis Oil). Sabin (executive commander) is Williams, 1925, son of the Guaranty Trust chairman. Williams (finance commander) is Princeton, 1924, a partner in Williams, Nicholas, & Moran, brokers.*

P. & A.

ALEXANDER J. CASSATT, *Harvard, 1927, son of Robert K. Cassatt, senior partner in Cassatt & Co., Philadelphia bankers. Member of Cassatt & Co.*

Underwood & Underwood

JOHN HAY WHITNEY, *Yale, 1926, son of Mrs. Payne Whitney.*

LESTER ARMOUR, *Yale, 1918, grandson of late great Philip Armour. Vice president, director, of Armour & Co.*

International

PAUL HYDE BONNER, *Harvard, 1915, vice president and director of Stehli Silk Corp.*

W. E. BOEING, *Yale, ex-1904. Chairman of the board, United Aircraft & Transport Corp.*

E. A. CUDAHY JR., *son of Edward A. Cudahy, founder and board chairman of the Cudahy Packing Co. President, since 1926, of the Cudahy Packing Co.*

Koehne

J. RUSSELL FORGAN, *Princeton, 1922, son of David R. Forgan, vice chairman of Chicago's National Bank of the Republic. Vice president of Brokaw & Co.*

LAMMOT DU PONT JR., *son of the president of E. I. du Pont de Nemours & Co. Inc., and now an employee at Headquarters in Wilmington, Delaware.*

PHILIP MATHER, *Yale, 1916, son of Samuel Mather, senior member of Pickands, Mather & Co., Cleveland iron factors. Employed at Pickands, Mather.*

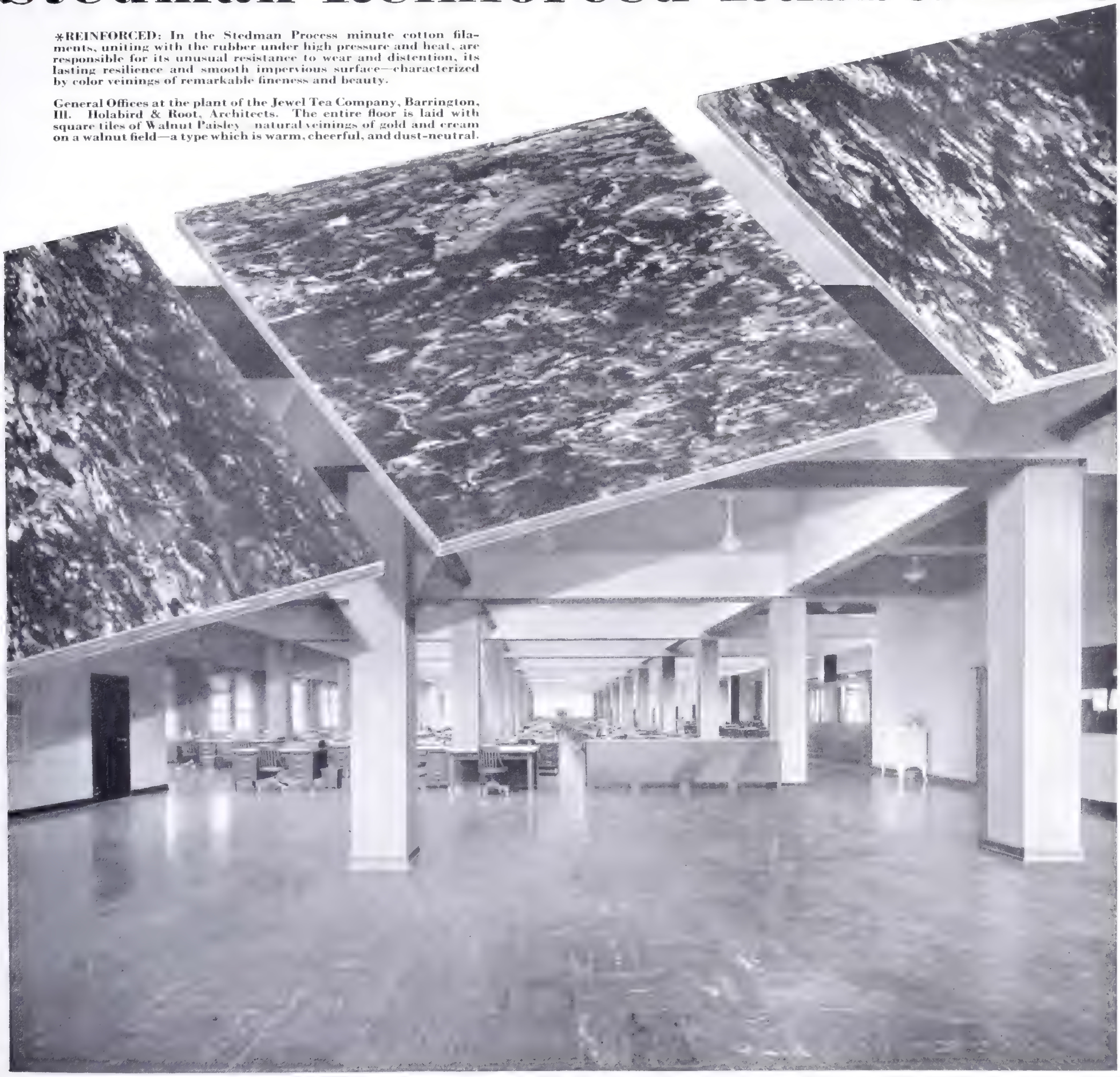
Always these ✓ advantages with a Stedman Floor

✓**Quiet** and quieting, there is no need to tiptoe on a Stedman Floor. It absorbs shock, deadens sound, permitting natural, easy walking without fatigue. Each floor is ✓**Comfortable** under foot, firm yet buoyant, with a smooth surface that is foot-sure and ✓**Easily Cleaned.** The material does not originate dust, and dirt cannot be ground in. It is ✓**Durable.** Stedman Reinforced Rubber is a homogeneous material, firm yet resilient, which will not show heel marks or caster marks. Always ✓**Attractive** because the color veins run throughout each tile, intermingling in natural patterns of unending interest. Offers unlimited ✓**Variety** through its 27 practical color types in tile and border forms. . . . A Booklet with Color Charts is free. STEDMAN RUBBER FLOORING COMPANY, SOUTH BRAINTREE, MASSACHUSETTS. • • • • • • • •

Stedman Reinforced* Rubber Tile

*REINFORCED: In the Stedman Process minute cotton filaments, uniting with the rubber under high pressure and heat, are responsible for its unusual resistance to wear and distention, its lasting resilience and smooth impervious surface—characterized by color veinings of remarkable fineness and beauty.

General Offices at the plant of the Jewel Tea Company, Barrington, Ill. Holabird & Root, Architects. The entire floor is laid with square tiles of Walnut Paisley natural veinings of gold and cream on a walnut field—a type which is warm, cheerful, and dust-neutral.

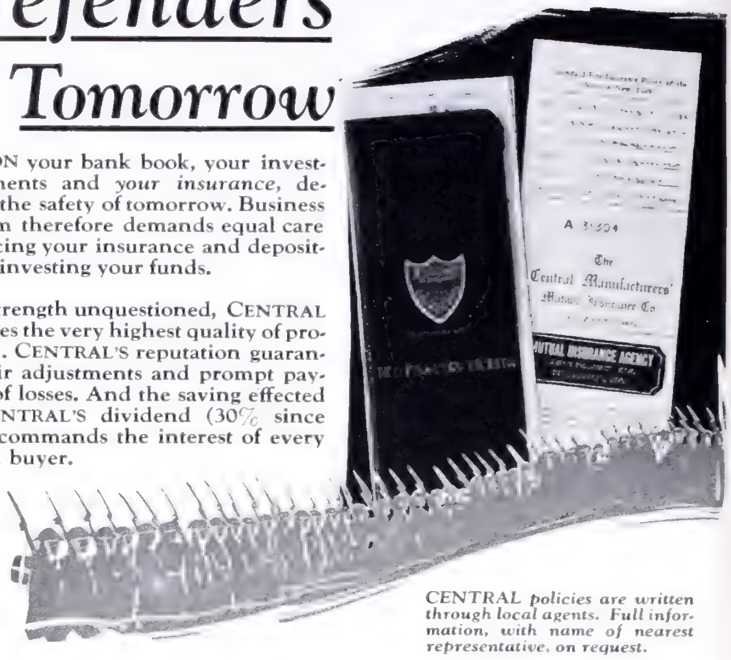


News-Sun Bldg., Springfield, O. — Schultze & Weaver, Archt., New York
A. G. Samuelson, Inc., Contr., Springfield, O.

PIONEERS

THE wide acceptance of Bayley Steel Windows and Doors is due to the fact that Bayley has pioneered in every important improvement since the birth of the industry. Having looked far ahead, Bayley has been able to anticipate the exact needs for better steel windows and doors of various types and for various uses in all kinds of buildings. Folders describing and illustrating Bayley Products sent on request. The William Bayley Company, Springfield, Ohio.

BAYLEY
STEEL WINDOWS & DOORS


A 31304
The Central Manufacturers' Mutual Insurance Co
MUTUAL INSURANCE AGENCY

Defenders of Tomorrow

UPON your bank book, your investments and your *insurance*, depends the safety of tomorrow. Business wisdom therefore demands equal care in placing your insurance and depositing or investing your funds.

With strength unquestioned, CENTRAL provides the very highest quality of protection. CENTRAL'S reputation guarantees fair adjustments and prompt payment of losses. And the saving effected by CENTRAL'S dividend (30% since 1921) commands the interest of every careful buyer.

CENTRAL policies are written through local agents. Full information, with name of nearest representative, on request.

CENTRAL'S DIVIDEND SINCE 1921 HAS BEEN 30%

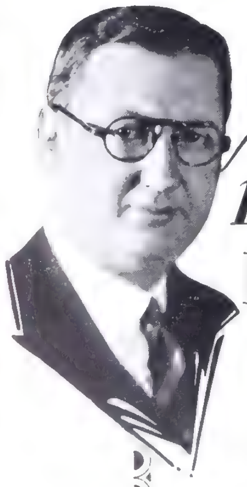
Organized 1876 *The* **CENTRAL** *A Friendly Company*
MANUFACTURERS MUTUAL INSURANCE COMPANY
C. A. L. PURMORT, *President* *Home Office:* VAN WERT, OHIO

Fire, Automobile and Tornado Insurance for Select Risks

ART IN INDUSTRY

In connection with the opening of their new first floor and the painting therefor of murals by Mr. Boardman Robinson, the Kaufmann Department Stores, Inc. announces a prize essay contest on the subject "Art in Industry" the prize to be $1,000 and the prize winning essay to be published in a forthcoming issue of FORTUNE. The judges are Mr. Norman Bel Geddes, Mr. Joseph Urban, Mr. Edgar Kaufmann. Rules of the contest, which closes January, 31, 1931, have been published in previous issues of FORTUNE. For information regarding the contest write the Art in Industry Contests Editor,

Kaufmann Department Stores, Inc.
Fifth Avenue Pittsburg



A Personal Invitation to Hotel Hollenden

THE Hotel Hollenden is ideally located for the convenience of the visitor whether he is in Cleveland on business or pleasure. Within a block or two of the Hollenden will be found the leaders in practically every activity of the city. Just a block or two away are the theatres, the shopping centers, the banks, the Public Auditorium and the principal office buildings. Located right in the heart of things, the Hollenden has for decades served the requirements of the most discriminating visitors. Anything that is required of a good hotel may be found at the Hollenden. You are cordially invited to make the Hollenden your home when you are away from home. The Crystal Dining Room and the Hollenden Coffee Shop offer a variety of good eating places.

Sincerely yours,
Theo DeWitt
Vice Pres. & Gen. Mgr.

In Cleveland-it's The
HOLLENDEN
THEO. DE WITT,
Vice Pres. and Gen. Mgr.

John Hancock Series

CLOSE CORPORATIONS

WHERE corporate stock is closely held and it is desired to perpetuate this arrangement, there is no easier way of accomplishing the desired end than by employing Business Life Insurance as a source of immediate funds to purchase the deceased stockholder's interest.

Among other phases of life insurance, this important subject is explained in our booklet, "This Matter of Success." A copy will be sent to anyone interested. Address a letter to:—

INQUIRY BUREAU

John Hancock
MUTUAL
LIFE INSURANCE COMPANY
OF BOSTON, MASSACHUSETTS
197 Clarendon St. Boston, Mass.

Please send booklet,
"This Matter of Success."
Name……………………
Address……………………
……………………
Fr.

Over Sixty-Seven Years in Business

Boomerang

Fortune

Sirs:

I have just read, in your October issue, the review of John K. Winkler's *Morgan The Magnificent.* That review, which is an outstanding piece of writing, and your policy of publishing unsigned articles, cause this letter. For I would call to your attention that your unnamed reviewer has, either consciously or unconsciously, written the finest possible thesis for Fortune itself.

Your reviewer points out that:

> "*In the 1,063 pages of the* Oxford Book of English Prose, *some 315 excellent writers of English and several accomplished composers of Latin prose treat of almost every subject in the world. Except one. Between 1326 and 1915 these chosen gentlemen with practical unanimity neglected to mention business.*"

From the very first issue of Fortune which, I believe, contained the masterly article on branch banking, on down through this very review, I, for one, have been conscious that in Fortune I have been reading *literature* about business. Whether it has been the description of a manufacturing town, a biographical sketch of a banker, or an analysis of the complicated and involved financial structure of a great corporation, your writers, whoever they are, have immortalized their subjects in the finest writing of the day.

Your reviewer continues:

> "*. . . there is no real analysis and no real writing. The true literary world will have none of business. Why?*
>
> "*One must listen to this learned world first:*
>
> "*I.—There are no properly equipped historians in America who know anything about business. Our economists and sociologists are outlandishly theoretical and naïve. They are doctrinaire to a man. Veblen's famous 'idle curiosity' which is the scientific spirit was Norwegian like Veblen. Social workers cannot discover the history of barter, usury, and promotion. Such professors as we have are ladies on this battlefield. The milk and water of our new politics is their fare.*
>
> "*II.—The Yankee business world has had a tendency, now passing, to organize itself against any such foolishness and danger as literature. How is a scholar, helpless without original sources, to do any research? There are no original sources. Business men don't keep any. They burn them up, if there are any at all. Look at Wall Street windows late of a winter afternoon. Through pane after unending pane along the vita-glassed canyons one sees conferences, tables packed close with men talking, nobody writing down anything. When they are not talking to each other, they are telephoning. It is a great waste of time to write anything; it is also dangerous. Even the Stock Exchange keeps no record of its transactions.*"

I have been amazed and fascinated by the material your writers have uncovered. How they get it, I don't know. I do know that my collection of Fortunes received and Fortunes to come will constitute an invaluable record and faithful picture of present-day Industrial Civilization in all its phases.

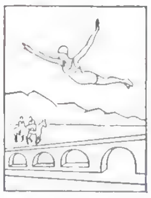
As the literary world's reason Number 3 for its disregard of business your reviewer describes a state of affairs which, it is to be hoped, all recognize as a once dangerous and now futile attempt to hide a very real world with a transparent curtain of sham. To quote him:

> "*III.—The talented commentators, critics, writers who were born into business or who have drifted into it by accident are bought up and snuffed out. The only two unlearned professions in the U. S. which pay better than that of the salesman are those of the ghost-writer and the press agent. There are authors of orations and editorial articles by trust company presidents whose daily stipend is greater than the monthly honoraria of serious literary persons.*"

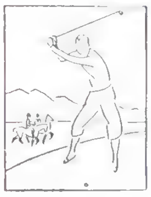
And finally, your reviewer, in setting up most vividly the difficulties of telling the true (and fascinating) story of business, causes me to rise and cheer the one publication which has had the ability and the courage to tell the story and make business like it. —A. E. G.

Fortune

Time, Inc., *Publishers*
205 E. 42nd St., New York, N. Y.
Ten Dollars The Year by Subscription—Not For Sale at Newsstands



This Winter, have a Complete Change



Scenery, climate, romance such as you never have known before... rest, relaxation, recreation that you have sought elsewhere but missed.

Come to El Mirador, in the Garden of the Sun, and let the Great Desert enfold you with its mystery and its peace. Bring the children. They will love it, and this kindly winterland will love them.

Bring your golf sticks and your tennis racquets. Bring riding things and hiking togs and swim suits. Come prepared to do what you love best, with the certainty that whatever you do will be different, here in this tropical oasis at the Desert's edge.

Interesting people who like to have the Desert and the Mountains somewhat to themselves are here. Let us send you our El Mirador book now, to help you plan your golden days in the Garden of the Sun.

in the
Garden of the Sun

EL MIRADOR
PALM SPRINGS
CALIFORNIA
115 MILES EAST OF LOS ANGELES

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November, 1930

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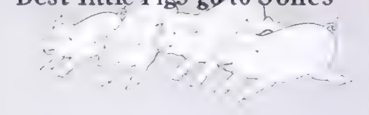
"Fortify for Fire Fighting"
FIRE
5 GAL PUMP TYPE NON FREEZING
SODA ACID TYPE
FOAM TYPE
FAMOUS SINCE 1907 NON FREEZING
Pyrene
FIRE EQUIPMENT FOR EVERY HAZARD
Pyrene Manufacturing Company
NEWARK NEW JERSEY
ATLANTA KANSAS CITY CHICAGO SAN FRANCISCO

"Most little Pigs go to Market
But the
Best little Pigs go to Jones"



JONES
DAIRY FARM
SAUSAGE

2000 dealers all over America supply a discriminating clientele with Jones Sausage *fresh from the farm* and Jones Bacon and Ham smoked over hickory logs in the old smoke house.

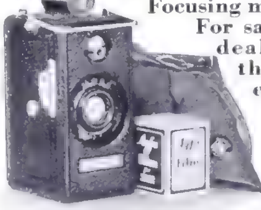
JONES DAIRY FARM
Fort Atkinson, Wis.

In the heart of Wisconsin's great dairy country—owned and operated by the Jones Family since 1834.

100 MEMO PICTURES with $1 worth of film

CARRY A MEMO Camera in your pocket — surest, quickest, most convenient still film camera in the world. 50 pictures with one 50-cent daylight-loading Agfa film. Easiest to load. Twick of the thumb advances the film. Spyglass finder locates subject instantly right side up. Memo gets everything on a trip. Wonderful for close-up portraits as well as landscapes. F 6.3 and F 3.5 anastigmat lenses.

Memo pictures are printed on paper exact size, as enlargements, and as projection rolls for a picture show with Memoscope. The new idea in still cameras for greater economy, convenience, utility. Memo $20. Focusing models to $40. For sale by camera dealers. Many thousands of enthusiastic owners. Interesting literature gives full details.



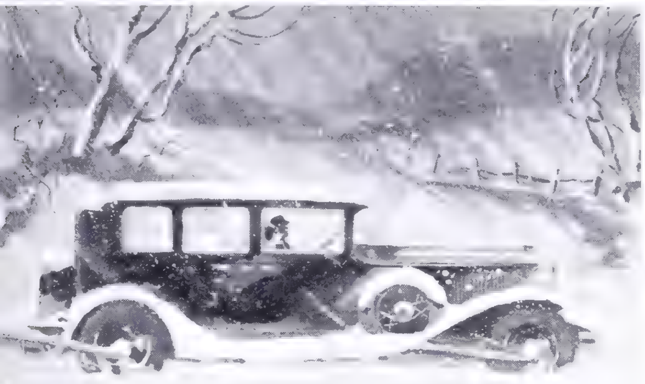
AGFA ANSCO OF BINGHAMTON, N.Y.
Please send me free 56 page Memo handbook
Name ____________
Address ____________ 22

BURL
PL

ALWAYS

CAR-HEAT CONTROL *in* Hādees HOT WATER Heater

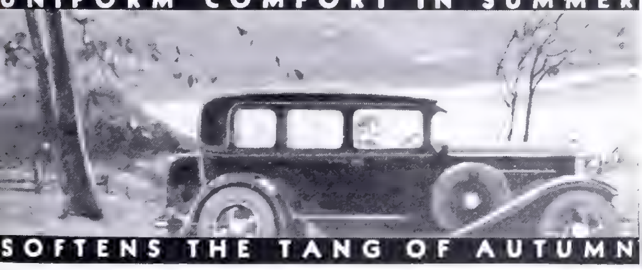
Just the heat you want when you want it



COZY WARMTH IN COLDEST WEATHER

TAKES THE CHILL OUT OF SPRING

UNIFORM COMFORT IN SUMMER



SOFTENS THE TANG OF AUTUMN

Every HaDees Heater guaranteed by the world's largest bonding house, the National Surety Company. Their Gold Bond guarantee of quality adds no extra cost to you.

Now you can keep your car warm and comfortable all the year 'round.

HaDees scientific Hot Water Heater brings complete heat control to the tip of your finger.

There is nothing like its electric fan-forced heat radiator for efficient, healthful warmth whether the weather be sub-zero or just mildly chilly.

Note the HaDees deflector which enables you to regulate both the volume and direction of heat as desired.

In the hot summer days you simply shut off the hot water and use the electric fan for cooling ventilation.

HaDees Heater becomes as important a part of your car as your hot water heating plant is a part of your home—yet easily changed from old to new car.

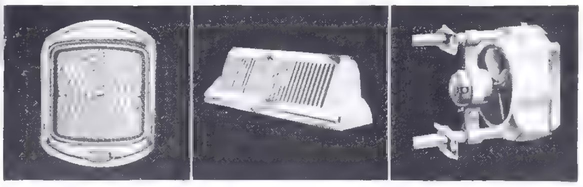
Examine the substantial construction and beauty of this chromium finished heating unit.

It uses no more current than a tail light, and costs no more for upkeep.

Ask your dealer to explain how easily you can add this wonderful advantage to your motoring comfort.

LIBERTY FOUNDRIES COMPANY, *Rockford, Ill.*
(A Division of Burd Piston Ring Co.)

Dashboard Model *Rear Seat Model* *Showing Electric Fan*



Front dash models for Sedans and Coupes—a special model for Ford Cars—also a De Luxe Rear Seat Heater.

HaDees NON FREEZING FLUID, *the never-failing, economical, all-winter radiator fluid. Ask your dealer.*

HāDees
HOT WATER
CAR HEATER
PATENT NOS. RE17131 and 1746985

Blows Hot when it's Cold.
Blows Cool when it's Hot.

In every civilized country in the world—
WARNER BROS. PICTURES
HUNTER

if the world is your market we'll tell the world—if a single state is your market we'll tell that state

with WARNER BROS. Industrial Pictures

Sound Pictures with sound recorded as picture is taken.

●

Sound Accompaniment Pictures with sound added after the film is made, permitting sound effects, lecture or musical accompaniment.

●

Silent Pictures with explanatory titles.

●

Portable Projectors for sales meetings and conventions.

●

Point-of-sale Presentations by means of specially equipped auto-trucks. These trucks with self-contained apparatus can present sound pictures on a five by seven foot screen in the open air on street or highway right where you want your advertising to strike home!

●

Warner Bros. cover the world. Warner production units are ready to go into action anywhere, at any time.

A Warner made industrial picture can be used to reach a guaranteed audience of 5,000,000 people in the finest moving picture houses. Or you can cover any particular territory you want—address dealer meetings a thousand miles away, or bring the home office and factory to the most distant members of your sales force.

The most powerful sales weapon modern science has developed is now ready to carry your message *in sight and sound* to an audience of your own selection!

WARNER BROS. INDUSTRIAL PICTURES, Inc.
220 West 42nd St., New York City

Please send illustrated book and full details on Industrial Picture making.

NAME____________________

COMPANY____________________

ADDRESS____________________

F11

WARNER BROS.
Industrial Pictures, Inc.

A subsidiary of Warner Bros. Pictures, Inc.

220 WEST 42nd St., NEW YORK CITY

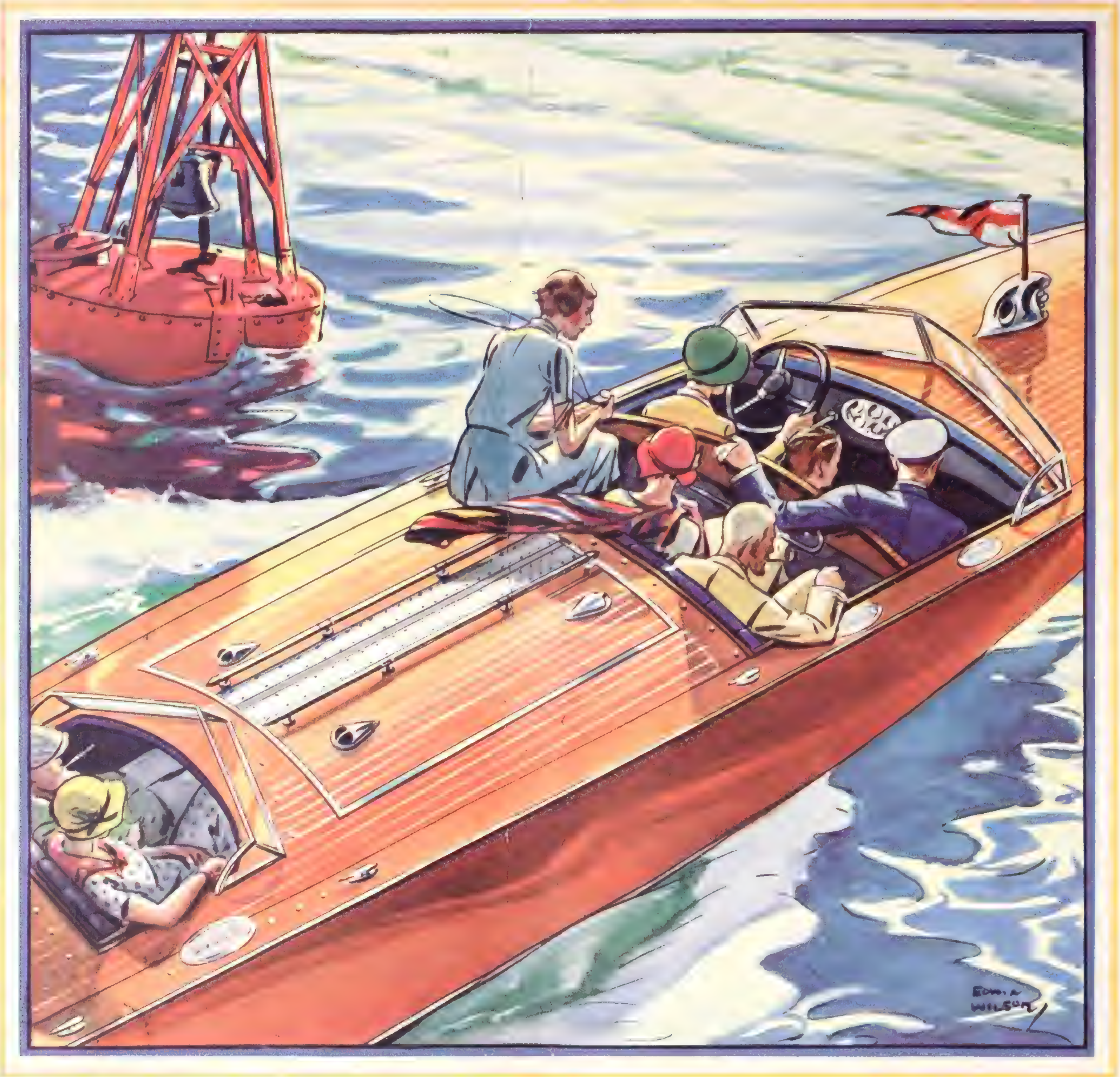
Branches in 26 Cities in the United States and throughout the World

WHAT WARNER BROS. PROMISE WARNER BROS. DELIVER

Fortune

ne Dollar a Copy DECEMBER 1930 Ten Dollars a Year

RONALD
McLEOD



THE 25-FOOTER—165 H. P. LYCOMING STRAIGHT 8 ENGINE—38 M. P. H.—PRICE, F. O. B. WORKS: $3200

DODGE BOATS are true to the tradition of luxury in fine boats - - - Yet Dodge methods of quantity production have brought them within the reach of thousands who never before could own such boats - - - Sleek, flashing hulls of genuine Mahogany over frames of stout white oak - - - fittings of lasting beauty - - - appointments complete to the last detail of comfort and convenience - - - a smooth flow of dependable power - - - unmatched speed - - - The vast new Dodge plant, equipped throughout for the most modern methods of quantity building, has produced all this at prices hitherto impossible - - - Models of 16, 21, 25 and 28-foot length, powered by Lycoming with motors of 40 to 300 horsepower and speeds of 30 to 45 m.p.h., start at the amazingly low price of $945 - - - Complete catalog will be mailed on request

DODGE BOATS

HORACE E. DODGE BOAT & PLANE CORPORATION. Works: Newport News, Virginia. GENERAL SALES DEPARTMENT: 21 West 46th Street, New York City

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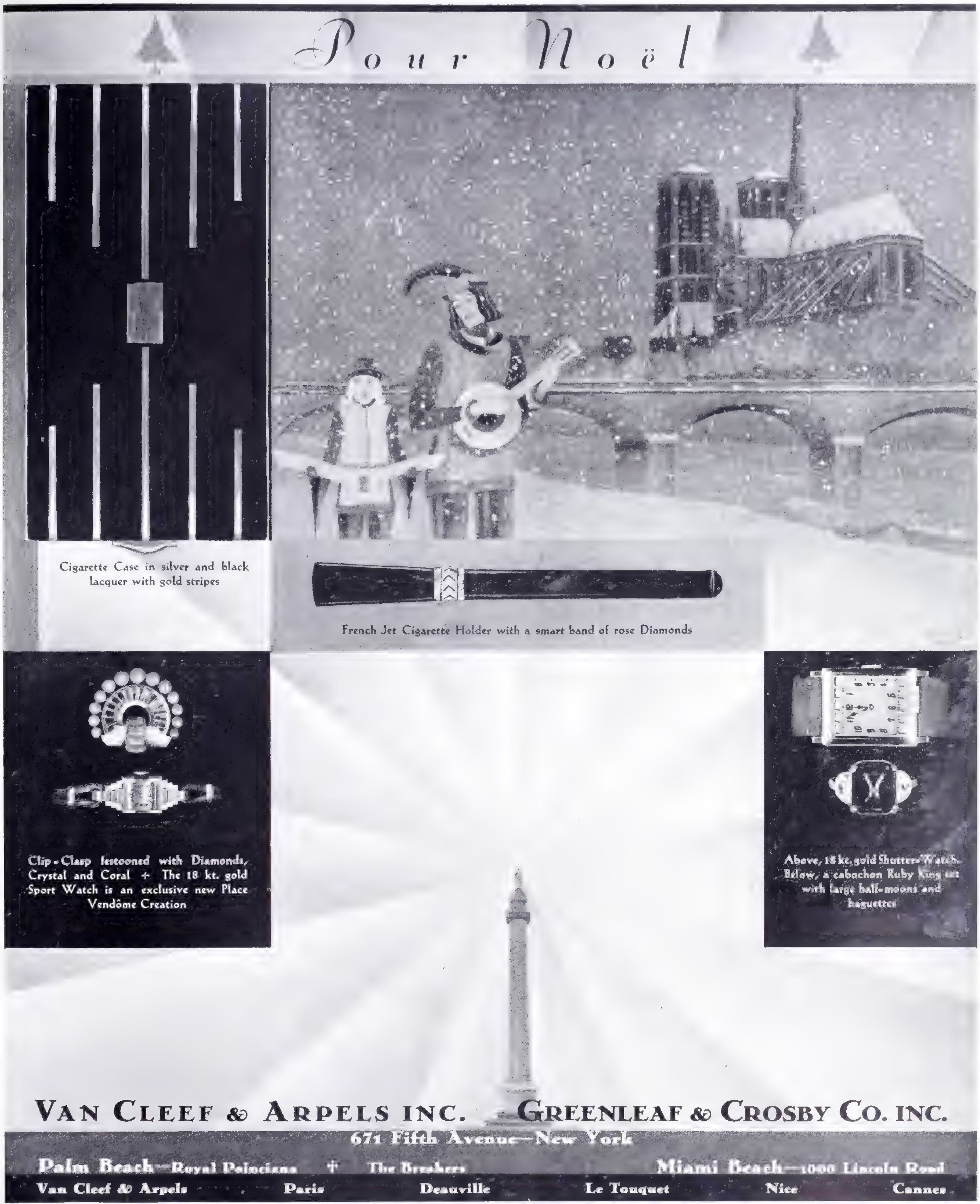


Pour Noël

Cigarette Case in silver and black lacquer with gold stripes

French Jet Cigarette Holder with a smart band of rose Diamonds

Clip-Clasp festooned with Diamonds, Crystal and Coral + The 18 kt. gold Sport Watch is an exclusive new Place Vendôme Creation

Above, 18 kt. gold Shutter-Watch. Below, a cabochon Ruby Ring set with large half-moons and baguettes

VAN CLEEF & ARPELS INC. GREENLEAF & CROSBY CO. INC.

671 Fifth Avenue—New York

Palm Beach—Royal Poinciana + The Breakers Miami Beach—1000 Lincoln Road

Van Cleef & Arpels Paris Deauville Le Touquet Nice Cannes

© 1930 G. & C. CO

Parfums CARON
Paris

CARON CORP., 389 FIFTH AVE., NEW YORK

FORTUNE is published monthly by TIME, Inc., at 205 East 42nd Street, New York, N. Y. Entered as second class matter January 7, 1930, at the Post Office at New York, N. Y., under the act of March 3, 1879. Subscription rates: One year in the U. S. and possessions, $10; Canada, $10.50; elsewhere, $11.

For a happy, prosperous
New Year

Left: Del Monte. Above: View of the Golden Gate

1931 What will it hold for you? Much we hope. This we know: A winter in the warm sunny California that San Francisco centers will put you in fine fettle for whatever is to come.

Long days on the links above the Golden Gate, at Del Monte and Pebble Beach . . . days in the saddle or motoring in the sun, will form a happy prelude to the busy days that lie ahead.

If you think you can't afford the time for fun—*Listen!* California is the fastest growing State in all the Union; San Francisco is its great headquarters city. The development the census showed you is a many-sided one. You cannot overlook this potent territory . . . if you can't take time for a winter holiday, then come on business. Edge the other in.

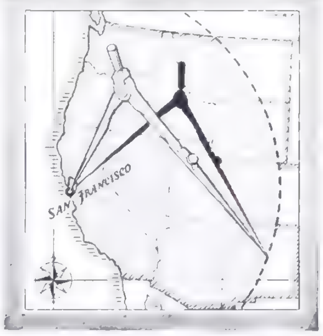
Surely you want to know more about the thirteen-million-people market that San Francisco serves most economically. See why this city holds financial and commercial as well as industrial leadership of the West. See the harbor, largest land-locked harbor in the world, that ranks below New York alone in value of water-borne tonnage. Study the opportunity that lies in the awakening market of 900,000,000 people in the lands around the Pacific.

Everywhere alert men are seeking to know more about this strategically located city. A city in the State whose wealth grows faster than its fast-increasing population.

Winter in San Francisco. Study the opportunity for your business here . . . And carry home a summer tan.

San Francisco wishes you a happy, prosperous New Year and she'll do her best to make it so.

SAN FRANCISCO
IN CALIFORNIA—"WHERE LIFE IS BETTER"



Write Californians Inc., Dept. 2212, 703 Market Street, San Francisco, for the two free, illustrated books: "San Francisco—in California—Where Life is Better" and "Why Manufacturers Choose San Francisco."

THE WORLD THAT FOUND ITSELF

YOU will remember Kipling's ship which was a dissonance of voices—of rivets, of beams, of engines, of deck planks—until the stress of a storm blended them into one voice, and that was The Ship.

So with the world, whose voices of yesterday were of London, or of Paris, or of New York, or of Berlin—but from whose dissonances is now emerging one voice—which is The World.

Working for many years with manufacturers whose products have crossed the boundaries of states and nations, we have branched into eleven offices in North America and three in Europe—the better to understand the Voice of the World, and speak its common tongue.

McCANN-ERICKSON
INCORPORATED

NEW YORK · CHICAGO · CLEVELAND · SAN FRANCISCO · DENVER
SEATTLE · LOS ANGELES · TORONTO · MONTREAL
VANCOUVER · WINNIPEG · LONDON · PARIS · FRANKFORT o.M.

DISTINCTIVE HOLIDAY GIFTS

These Handsome French Moire Silk Cravats, Luxurious in Quality, come in Choice Colorings. Price, $6.50 each. Please state Colors preferred when ordering by mail.

Illustrated Brochure sent upon request

A. Sulka & Company

SHIRTMAKERS AND HABERDASHERS

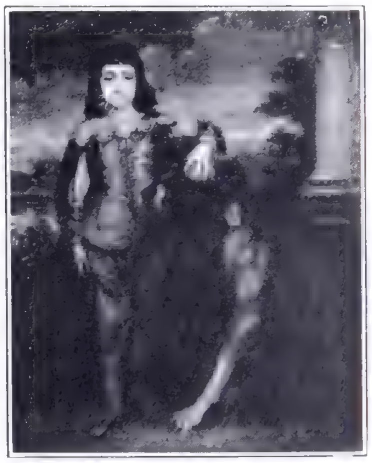
LONDON
27 OLD BOND STREET

NEW YORK
512 FIFTH AVENUE

CHICAGO
6 SO. MICHIGAN AVENUE

PARIS
2 RUE DE CASTIGLIONE

The
NEWHOUSE
GALLERIES



"BOY WITH DOG"
BY
WILLIAM DOBSON

PAINTINGS

New York
11 EAST 57th STREET

St. Louis
484 N. KINGSHIGHWAY

FRENCH
AND COMPANY INC.

ANTIQUE
TAPESTRIES
FURNITURE
TEXTILES
WORKS of ART

210 EAST 57TH ST. NEW YORK

Aristocratic JEWELRY for MEN —

Brand-Chatillon specializes in the all-important jeweled accessories which distinguish the man of aristocratic taste and correct grooming.

Jumping-Hour Wrist Watch. The hour flashes in the dial face. White gold. Swiss 17-jewel movement. $375.

Dial Telephone Pencil. Revolving ball end. $24.

Book Locket. Photographs reproduced on gold leaves. Gold with enamel motif. Four sizes. $50 to $120.

Automatic Opening Watch. Can be opened with one finger. Closing cover winds watch. In all leathers. $65.

Jeweled Tortoise Shell and Black Amber Cigarette Holder. Set with sapphires and diamonds. $150.

French Bit Cuff Links. White gold with lapis mounted on ends. $52. Carnelian, $50. Green Onyx, $50. Sapphire, $60. Also in green gold.

Combination Cigarette Lighter and Watch. 14k Gold. $275.

French Wrist Watch. 18k Gold. Triple cord strap. An exceptionally handsome timepiece. $225.

Dress Set. Cuff Links, Studs and Waistcoat Buttons, Black Onyx with platinum center, set with row of brilliants. $700.

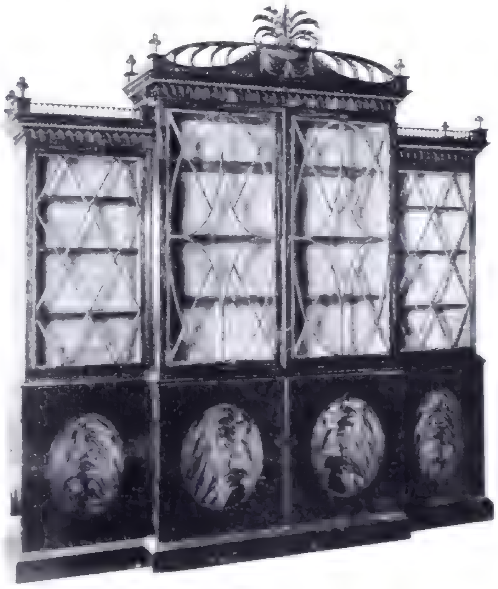
THE BRAND-CHATILLON CORPORATION
Jewelers & Silversmiths
775 FIFTH AVE. *Savoy Plaza* NEW YORK

JOHN LEVY GALLERIES

PAINTINGS

ONE EAST 57TH STREET
NEW YORK

CHARLES *of* LONDON



Interiors

NEW YORK
2 WEST 56TH STREET
730 FIFTH AVENUE

LONDON
7 WOODSTOCK STREET
NEW BOND STREET

Member of the Antique and Decorative Arts League

Alfred Nelson Co

580 FIFTH AVE. N. W. Corner 47th Street NEW YORK

We are noted **for making the finest strictly custom made to individual measure sack suits for $150.**

VIOLA ROOT CAMERON

Genealogist

ESTABLISHED IN 1913

FAMILY HISTORIES
COMPILED AND PUBLISHED

COATS OF ARMS

CORRESPONDENCE INVITED

521 FIFTH AVENUE
NEW YORK

57 CHANCERY LANE
LONDON

56, FAUBOURG SAINT-HONORE
PARIS

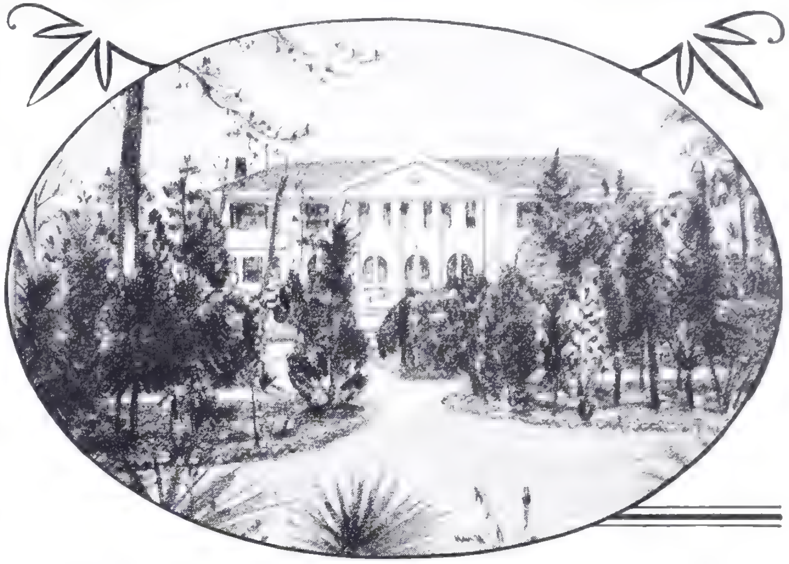
AMSTERDAM BERLIN

For Sale

THISTLE DHU

Show Place of Pinehurst, N.C.

with famous pitch and putt golf course



THISTLE DHU, famous estate of the late James Barber is for sale. It lies in the heart of the healthful and beautiful Pine Belt in fashionable Pinehurst, N. C.

The property includes the magnificent Barber mansion illustrated, and described at right; landscaped grounds, dotted with lovely old pine trees and formal flower gardens; and the Thistle Dhu golf course, perhaps the best known small golf course in the country, of which the *American Golfer* has written:

"The golf course at Thistle Dhu is of 18 holes. It is one hundred yards out and one hundred and one-third yards in. Par is 20-21-41. The course record is 28 and it is in no danger from you. . . It is most interesting and entertaining, calling for a delicate and expert touch in the short game as evolved in pitching and putting . . . you will come away chastened."

For sportsman, out-of-doorman, etc., Thistle Dhu offers a sumptuous, entertaining, and interesting winter home. Brokers fully protected. Inquiries should be addressed to the Estate of James Barber, Room 2960. 120 Broadway, New York City.

A View of the Colonial Mansion; suggesting the beauty of the setting. Within, completely furnished, is the main floor containing entrance hall, living room, card room and sun parlor (with lavatory, dining room, kitchen, butler's pantry, large servant's quarters.) The second floor contains eight bedrooms with six baths, glassed-in sun porch, generous closets. In the basement is the billiard room with two tables, card room, lavatory, closets, boiler room for steam heating, laundry, etc.

FOR SALE *or* RENT
IN PINEHURST

Other properties of the late James Barber

For sale or rent: Cottages for large or small families. For sale: 2,000 acres of hilly land suited to hotel or country club, with hunting preserve and lakes. Building lots in Pinehurst and Southern Pines also for sale.

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Splitting a Hair IS A WHOLE LOT EASIER *than making a Gelatin Capsule*

Because 1/1000 of an inch is the limit of variation, and a few extra drops of water in the air may spoil the whole batch, Eli Lilly & Company depend for their success on Manufactured Weather

THE innocent-looking little *capsule* that measures your prescription off into so many doses involves one of the most delicate manufacturing processes in the world.

Only five or six companies attempt to make *them* at all. Even these never used to operate in the summer, and their success in winter was hazardous—until Manufactured Weather came along.

The trouble begins with the gelatin itself — sticky, temperamental stuff that reacts to tiny amounts of moisture in the air like a blotter to wet ink. The next difficulty is the thinness of the capsule wall—3½ to 5 thousandths of an inch. One thousandth of an inch is the greatest variation permitted. Otherwise the capsule cup and cap won't fit.

The capsules are molded on bronze pins dipped into the gelatin. And here is another hurdle for the harassed capsule-maker to leap. Let the temperature of these pins vary more than one or two degrees Fahrenheit, and the gelatin becomes too thick or too watery.

As if this isn't already enough, the moisture content of the air must not vary more than 1/28,000 of a pound per cubic foot! For good measure, gelatin picks up dust more easily than a vacuum cleaner, so that the air must be at least 99 44/100% pure.

With Manufactured Weather, every one of these precise requirements is filled, and nearly every capsule is perfect, winter and summer, despite the whimsical gelatin.

Another result of Manufactured Weather in the Lilly plant is an unusually low labor turnover, because working conditions are so comfortable the year round.

Capsule-making is but one of many industrial uses of Manufactured Weather. Wherever moisture-sensitive (hygroscopic) materials are found—in textile mills, candy factories and food plants—you'll find Manufactured Weather producing the exact conditions of temperature, humidity and air motion demanded. Today there are more than 3,000 installations of Manufactured Weather in more than 200 types of industries.

We shall be glad to furnish you with further details about the use of Manufactured Weather in your business, whether it be for conditioning processes or products or for creating ideal conditions of personal comfort. We suggest that you drop a line to our Newark office today.

NOTHING BUT TROUBLE used to be the story of capsule making. But now they can be turned out in definite quantity production, more alike than peas in a pod, since Manufactured Weather stepped in to keep temperature and humidity constant.

●

MICROMETER-CALIPER

ONE THOUSANDTH OF AN INCH isn't much leeway. But that's all that can be allowed. Largest capsule wall is only 5/1000 of an inch thick, and smallest is 3½/1000.

Carrier Engineering Corporation

NEWARK, NEW JERSEY

OFFICES: New York, Philadelphia, Boston, Chicago, Cleveland, Washington, Detroit, Dallas, Los Angeles

EXPORT DIVISION: 505 Fifth Avenue, New York

CARRIER ENGINEERING CO., LTD.
LONDON, PARIS, BOMBAY,
CALCUTTA, JOHANNESBURG

CARRIER
LUFTTECHNISCHE GESELLSCHAFT
STUTTGART, BERLIN

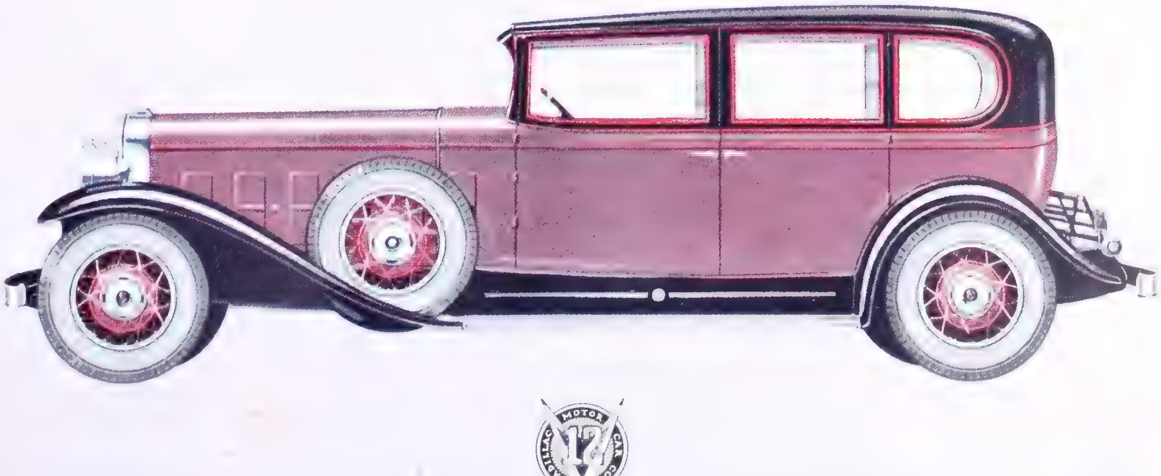
Manufactured Weather *makes* "Every day a *good* day"

TWELVE CYLINDERS

The new Cadillac V-12 is powered with an engine of the same type as the Cadillac V-16 —in fact, a duplicate of this engine in pattern and appearance, but having twelve instead of sixteen cylinders. Coachwork and interiors of rare beauty by Fisher and Fleetwood

Ten body styles; wheelbase 140-143 inches. Prices from $3795 to $4895, f. o. b. Detroit

CADILLAC MOTOR CAR COMPANY • DIVISION OF GENERAL MOTORS



PRECISION

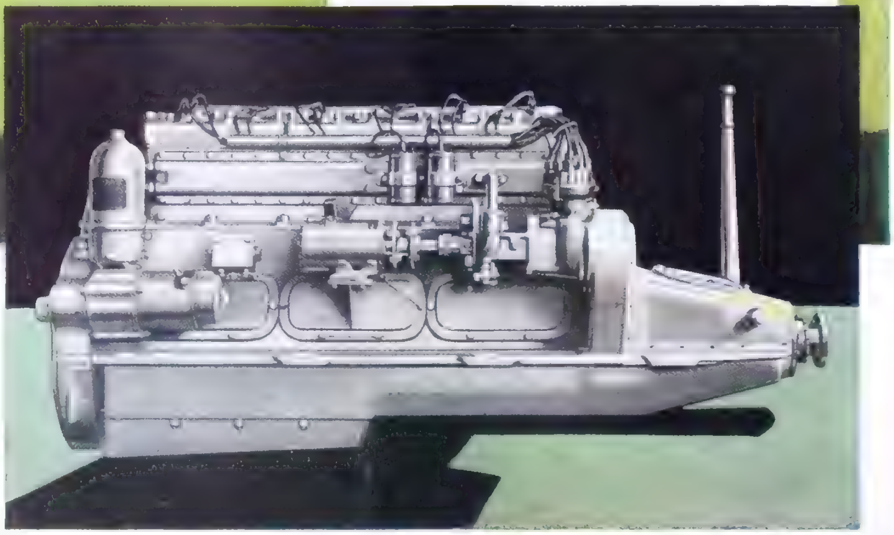
Sterling

THE ENGINE OF REFINEMENT

Precision in Sterling engines is attained. not by the speediest production methods, which this company has always maintained cannot produce full load engines of reliability, but by machining to closest tolerances, and then accurately fitting by hand. Main bearings, for instance, are line reamed by machine; then "blued" in by the original hand process. Pistons are slowly machined that the ring grooves shall be concentric and devoid of any inaccuracies. Cylinders are honed, one at a time, to micrometer exactness.

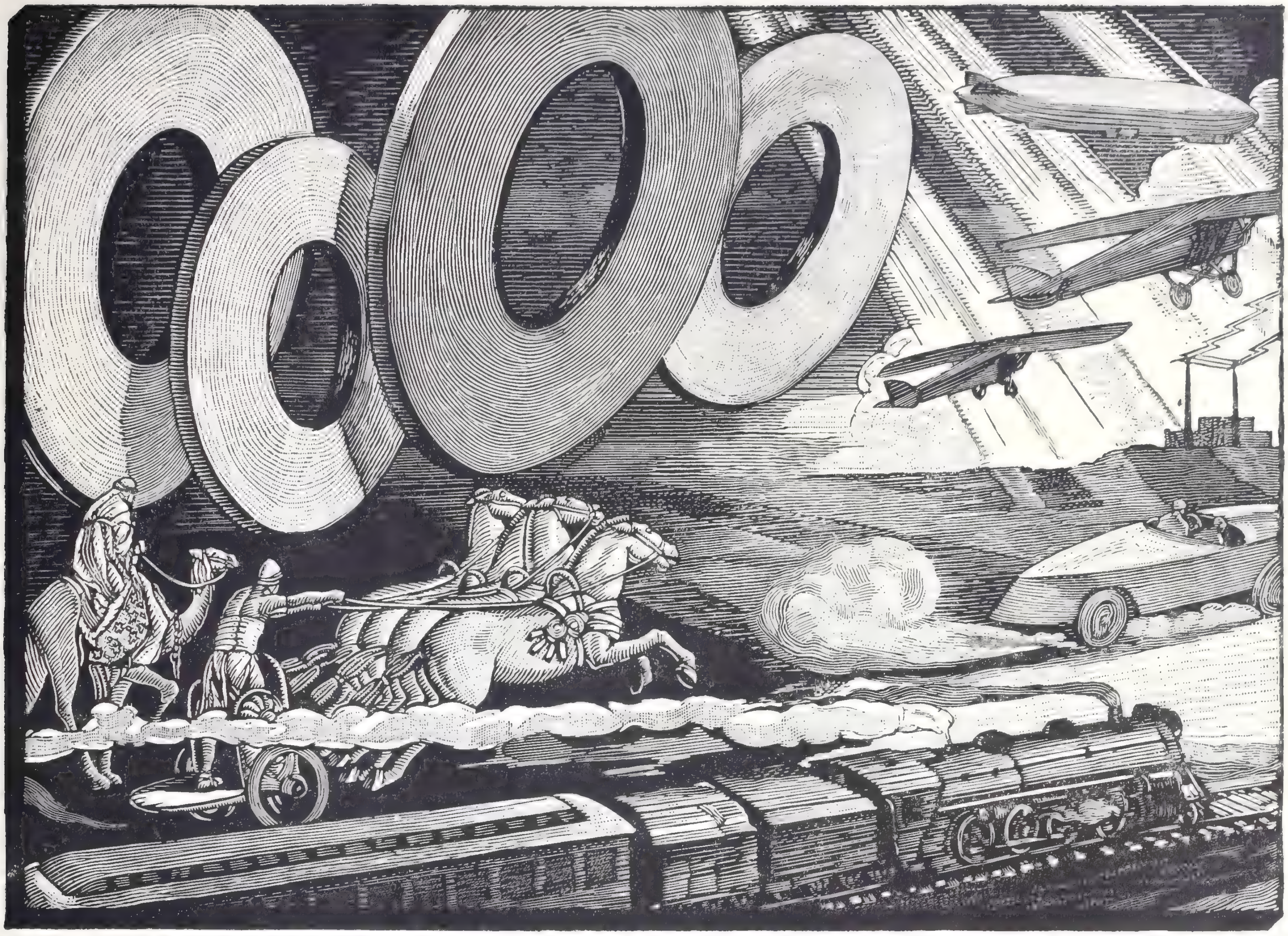
Building Sterling Petrel engines to their present leading status has required 4 years. They graduate into 1931 without a single mechanical change; unmatchable
in developing 200 H. P. at 2000 R. P. M.,
in power at a safe engine speed,
in turning the larger propeller,
in possessing the only 7 bearing crankshaft that is fully counter-weighted and in true dynamic balance
and in being
safely and economically carbureted.

STERLING ENGINE COMPANY
1270 Niagara Street
Buffalo, New York, U. S. A.



W. H. Moreton Corp., 1043 Commonwealth Ave.,
distributors, Boston

Bruns, Kimball & Co., 5th Ave. at 15th St.,
distributors, New York



SPEED — On the ancient Egyptian desert — the Camel.
SPEED — In the Roman amphitheatre — the Chariot.
SPEED — Today — machines that work precisely.
SPEED — In this machine age — almost frictionless . . . .
SPEED — High speed production with split-hair precision means *grinding* — grinding wheels, grinding machines — NORTON.

NORTON COMPANY, *Worcester, Mass.*

NORTON — Grinding Wheels . . Abrasives for Polishing . Pulpstones . . . Floor and Stair Tile
Grinding and Lapping Machines . Refractories . . Porous Plates . Abrasive Aggregate

The New York Trust Company

Capital, Surplus and Undivided
Profits $48,000,000

TRUSTEES

Frederic W. Allen	Lee, Higginson & Company
Arthur M. Anderson	J. P. Morgan & Company
Mortimer N. Buckner	Chairman of the Board
James C. Colgate	James B. Colgate & Company
Alfred A. Cook	Cook, Nathan & Lehman
William F. Cutler	American Brake Shoe & Fdy. Co.
Francis B. Davis, Jr.	United States Rubber Company
Harry P. Davison	J. P. Morgan & Company
Robert W. De Forest	De Forest Brothers
George Doubleday	Ingersoll-Rand Company
Russell H. Dunham	Hercules Powder Company
Samuel H. Fisher	New York
John A. Garver	Shearman & Sterling
Artemus L. Gates	President
Harvey D. Gibson	Chairman, Executive Committee
Charles Hayden	Hayden, Stone & Company
F. N. Hoffstot	Pressed Steel Car Company
Walter Jennings	New York
Darwin P. Kingsley	New York Life Insurance Co.
Edward E. Loomis	Lehigh Valley Railroad Co.
Robert A. Lovett	Brown Brothers & Company
Howard W. Maxwell	Atlas Portland Cement Company
Edward S. Moore	New York
Grayson M.-P. Murphy	G. M.-P. Murphy & Company
Harry T. Peters	New York
Dean Sage	Zabriskie, Sage, Gray & Todd
Louis Stewart, Sr.	New York
Vanderbilt Webb	Murray, Aldrich & Webb

100 BROADWAY

40TH STREET AND MADISON AVENUE
57TH STREET AND FIFTH AVENUE

Net Profits Increased 101.7%

MAJOR PART OF INCREASE ACHIEVED IN 1930

26 Sets of Local Copy Used

BECAUSE their fiscal year ran from July 1, 1929 to June 30, 1930, one might infer that the increase in earnings of this Company—a leader in the farm supplies industry, occurred before the slump. Such was not the case. 70% of the year's volume and 80% of the profit came in the first half of 1930.

In a letter to his sales organization, the President discusses the progress made. An excerpt from his letter follows:

"The annual Report of this Company has just been mailed . . . It shows that in the fiscal year just closed your Company made a substantial improvement in earnings . . . But progress imposes responsibilities; there is no standing still, we must go forward or . . . backward . . . So, in thanking our salesmen for their work last season, I want to emphasize with all the force . . . that it will be fatal for any of us to depend upon the good work done last year to do this year's job . . . Your management will try to set the pace by giving you the proper tools to work with. I want to sketch these briefly:

"1. The basis of progress is the quality of our product. You are assured of having the best product that modern science and careful manufacturing can produce. I state this not in a spirit of boasting, but simply as a well-earned tribute to our manufacturing and technical departments . . .

"2. This year we shall make available . . . the results of a thoroughly organized marketing program based upon two years of . . . study. We want your enthusiastic co-operation in using these plans to improve your own work.

"3. You are assured of the continuance of advertising support which is unique in its selling force . . ."

The factors behind the Company's progress which are here enumerated precede the reference to advertising. And rightly so.

What was the advertising problem? In 1928, when we began to share in the work, the Company's advertising consisted of standardized advertisements. Copy used in one state was used in another. If we assume that a *general appeal* was sound, this advertising was excellent. But an analysis of the situation revealed that a general appeal was weak. Conditions varied from section to section. Remarkable results achieved by a farmer in one district were ignored by a farmer in another, where conditions were different. This was one phase of the problem. Others were the relationship of the salesman and the dealer to the farmer. One copy plan must appeal to all.

The answer was found in the use of *local news*. The country was divided into 26 zones. Advertisements showed in definite amounts how local farmers cut costs and increased profits.

In each of the 26 zones, farmers saw pictures of men they either knew or knew about, pictures of crops their neighbors sold, headlines that led them into copy which won their confidence and made them want the right "supplies." The day of generalities was gone.

We prepare 26 times as many advertisements as were used in 1927. Farmers who read these items of local news order by brand, just as women do in purchasing cosmetics and groceries.

Dealers have discovered that it pays them to tie-in with this copy. Salesmen have learned that this advertising helps them increase their orders; they see the copy work.

The cost of preparing such advertising is of course greater than before. Thus the client pays us considerably more than was paid to the former agency. *But the effectiveness of his appropriation has been doubled or trebled.*

THIS whole program is an example of the working of the Cowan & Dengler Fee System.

On this same account, we have planned and prepared direct mail campaigns totaling $600,000, all on the 26-zone basis. Under our Fee System there is no prejudice against *non-commissionable* or low-profit mediums.

We will be glad to send executives or bankers a memorandum describing the Fee System which contributed to such results.

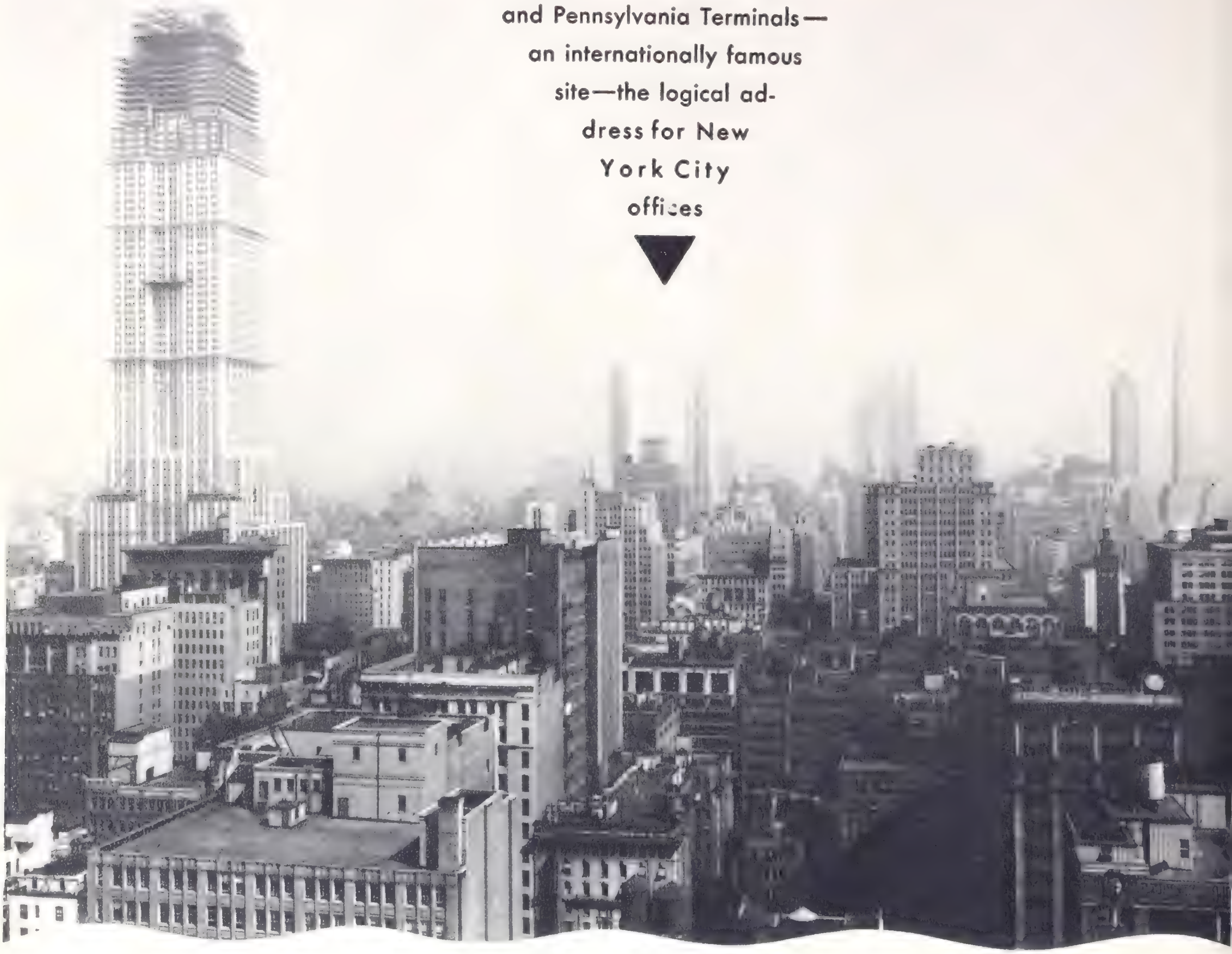
COWAN & DENGLER

ADVERTISING • MERCHANDISING • SALES COUNSEL

NEW YORK

EMPIRE STATE—world's largest office building—between Grand Central and Pennsylvania Terminals—an internationally famous site—the logical address for New York City offices

▼



EMPIRE STATE

FIFTH AVENUE AT 34th STREET, NEW YORK

OFFICERS

ROBERT C. BROWN	ALFRED E. SMITH	J. HOLLOWAY TARRY
Vice President & Treasurer	*President*	*Secretary*

DIRECTORS

PIERRE S. DUPONT MICHAEL FRIEDSAM ALFRED E. SMITH JOHN J. RASKOB ELLIS P. EARLE
AUGUST HECKSCHER LOUIS G. KAUFMAN

READY FOR MAY 1931 OCCUPANCY

For Rental Information Inquire
H. Hamilton Weber, rental manager, or your own broker

THE READYSET TRAVELER

From the unbeaten track . . . from the originality of stylists and camera designers, comes the Readyset Traveler —unquestionably the most outstanding and practical innovation in camera creation of this beauty-conscious day.

In its distinctive specially-woven repp covering, colorful striping, platinum finish, and mechanical rightness there is a cosmopolitan air . . . an expression of the modern spirit that appeals to all who travel—at home or afar. For the Traveler looks like custom-made luggage . . . and *is* luggage—luggage to pack full of pictures.

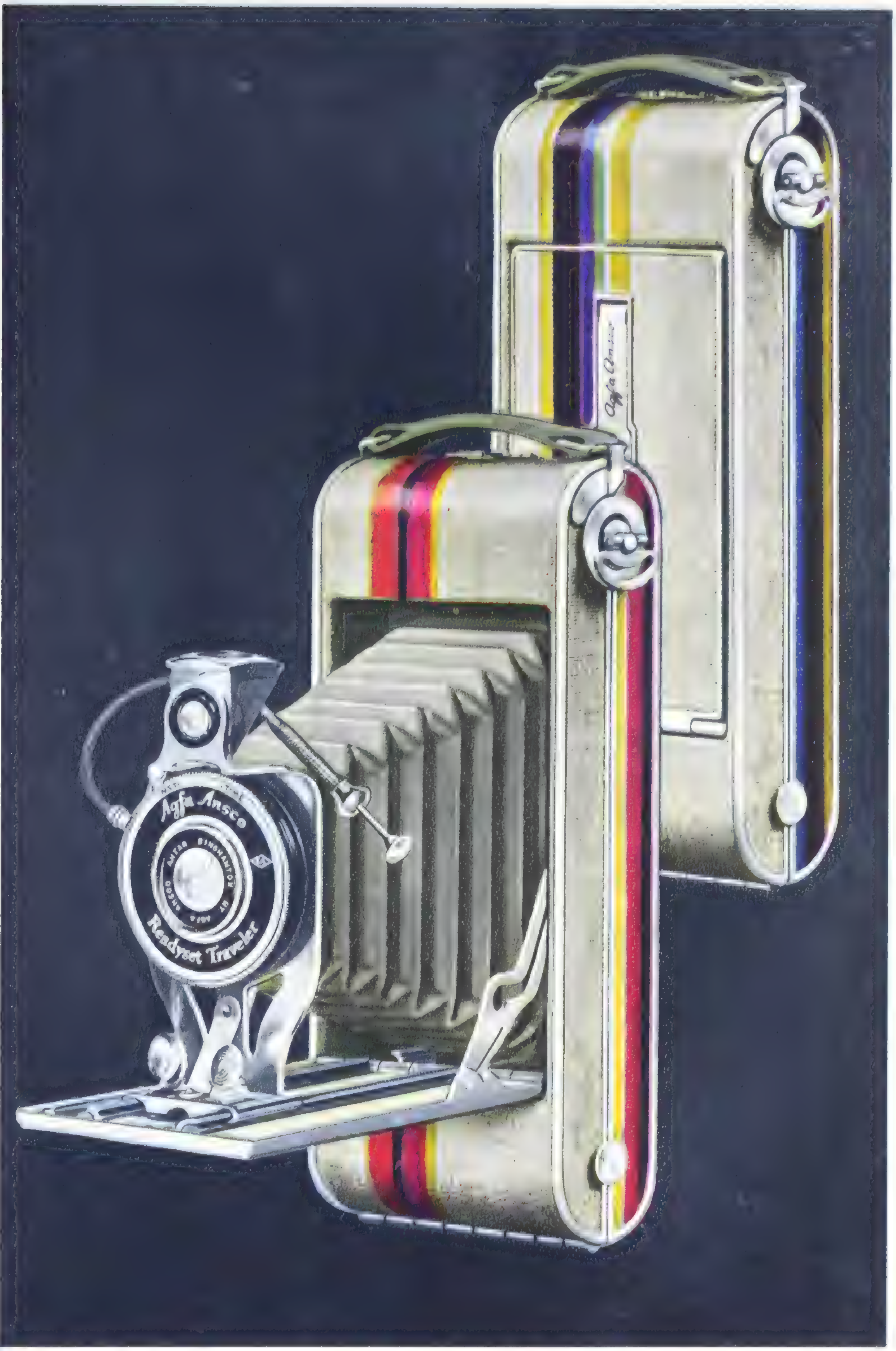
The Traveler is a certified picture-taker. One you can count on for clear sharp pictures always.

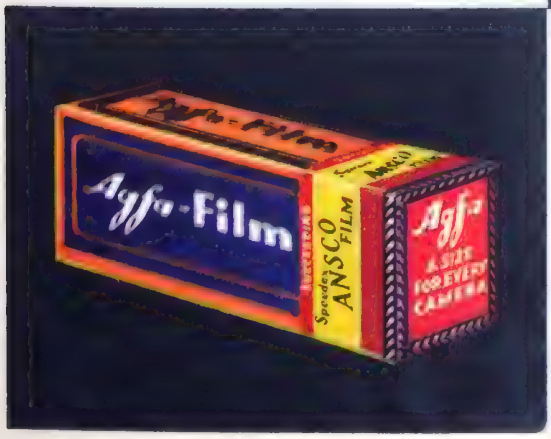
You'll be proud to own, or give as a gift, the colorful, smart Traveler. For the thrill of its possession is surpassed only by the delight in its remarkable picture-taking ability. Ask to see it when you buy your next roll of film.

No. 1 Readyset Traveler—$13.00
(2¼ x 3¼ Pictures)

No. 1A Readyset Traveler—$16.00
(2½ x 4¼ Pictures)

Available
in four different color stripings





And the Traveler is one of the famous Agfa Ansco Readyset cameras . . . as nearly automatic as cameras can be and yet insure perfect pictures. No focusing, no shutter adjustments—just "Open, aim, shoot." As simple as that.

Agfa film—*the all-weather film*—takes good pictures anywhere . . . under the sun, or under a cloud. A size for every camera.

READYSET TRAVELER

BY AGFA ANSCO

AGFA ANSCO OF BINGHAMTON, N. Y.
Agfa Ansco Ltd., 204 King Street East, Toronto, Ont.

MUSIC'S RICHEST VOICE AWAITS YOU

There's a voice in organ music . . . now a vibrant, rolling grandeur . . . now a whisper, filled with color . . . now a throbbing silence. To your home the Wurlitzer Residence Pipe Organ brings this glowing, living beauty.

The loveliest melodies man has made will thrill you as you play them, charming the hours when home means most. Or you may, at the mere touch of a button, flood your home with perfect reproductions of the whole glorious range of music, interpreted by artists for you, your family, and your friends. This modern instrument requires little space . . . and never before has a superb residence organ of its quality been available at such a moderate price.

You are invited to hear, and to play, this pipe organ at your nearest Wurlitzer Studio . . . New York, Buffalo, Chicago, Cincinnati, Cleveland, Los Angeles, Pittsburgh, or Detroit.

The price —
$6500 and upward

WURLITZER
Reproducing
Residence Pipe Organ

A beautiful brochure, with photographs of installations, may be obtained from any Wurlitzer store.

©1930 Wurlitzer

Successful Advertisers Need Today

the Gifted Product

. . . even more than the Gifted Pen

AN ADVERTISEMENT TO THE MANUFACTURER SEEKING AN *ADVERTISING AND SALES EXECUTIVE* WHO CAN PUT IDEAS INTO GOODS AS WELL AS INTO WORDS

A year ago the coffee business was in the advertising doldrums. Nothing new had happened for months. Then someone thought of "dated coffee" in connection with the Standard Brands trucking system. And Chase & Sanborn stepped into the spotlight.

Its advertising took on the breath of life. Sales increased 400%. *A gifted product had preceded the gifted pen!*

• • •

Another "gifted product" idea two years ago licked the worst competitive problem in the history of the American watch business. Facing a bitter price war against flashy but undependable immigrant watches, Elgin went to Paris. Asked famous couturiers to design and sponsor an ultra-smart array of moderate-priced women's watches. And the sales of the new line started mountain-climbing.

All credit to the brilliant advertising writer who presented the "Elgin Parisiennes." But the idea began with *the man behind the man behind the pen!*

• • •

The writer of this advertisement thinks that writing copy *into* a product is more important today than writing copy *about* it.

He believes that during the next few years some of the keenest men in the advertising business—professionally trained advertising men—are going to start mapping out advertising campaigns *in the factory* by putting ideas into goods. Laboring at the source rather than at the outlet of advertising ideas. Feeding news into the product while the advertising agency gives it expression.

With any manufacturer who is thinking in these terms this man is seeking an interview.

For the last three years he has been an executive on the staff of one of the largest New York advertising agencies. He is leaving with the full confidence of the principals of this agency to seek a new opportunity in his chosen field.

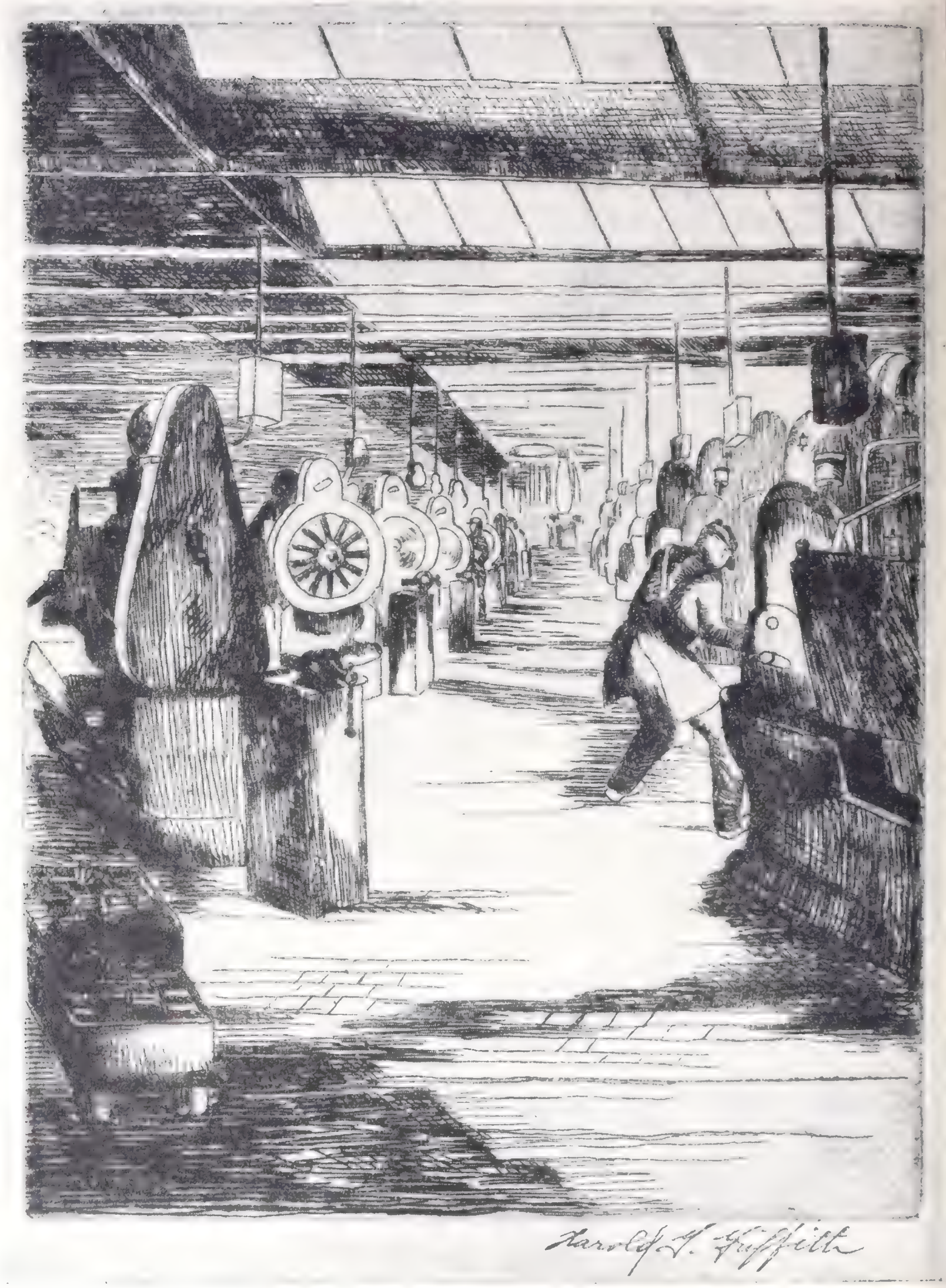
• • •

The position this man seeks may have any one of a dozen titles—or none at all. He may find his opportunity as a sales or advertising manager. Or possibly his greatest usefulness would be as an assistant to the head of the business, running an idea-laboratory for the development of new sales and advertising themes. And adding his technical experience to the direction of advertising policies.

This man would enjoy a talk with any manufacturer who is interested in this subject, whether or not he is now seeking a new executive.

● *HE CAN BE REACHED BY ADDRESSING* "Box 17," FORTUNE MAGAZINE

IF YOU WANT LOWER COSTS



CLEVELAND asks the business man seeking lower operating costs to check any other location item by item with this city. In such cost items as raw materials, electric power, fuel and labor per unit produced, the economies of the Cleveland location are often decisive. Cleveland also offers important transportation and sales economies. Relocation here may relieve a business from serious handicaps and reverse an unfavorable profit trend.

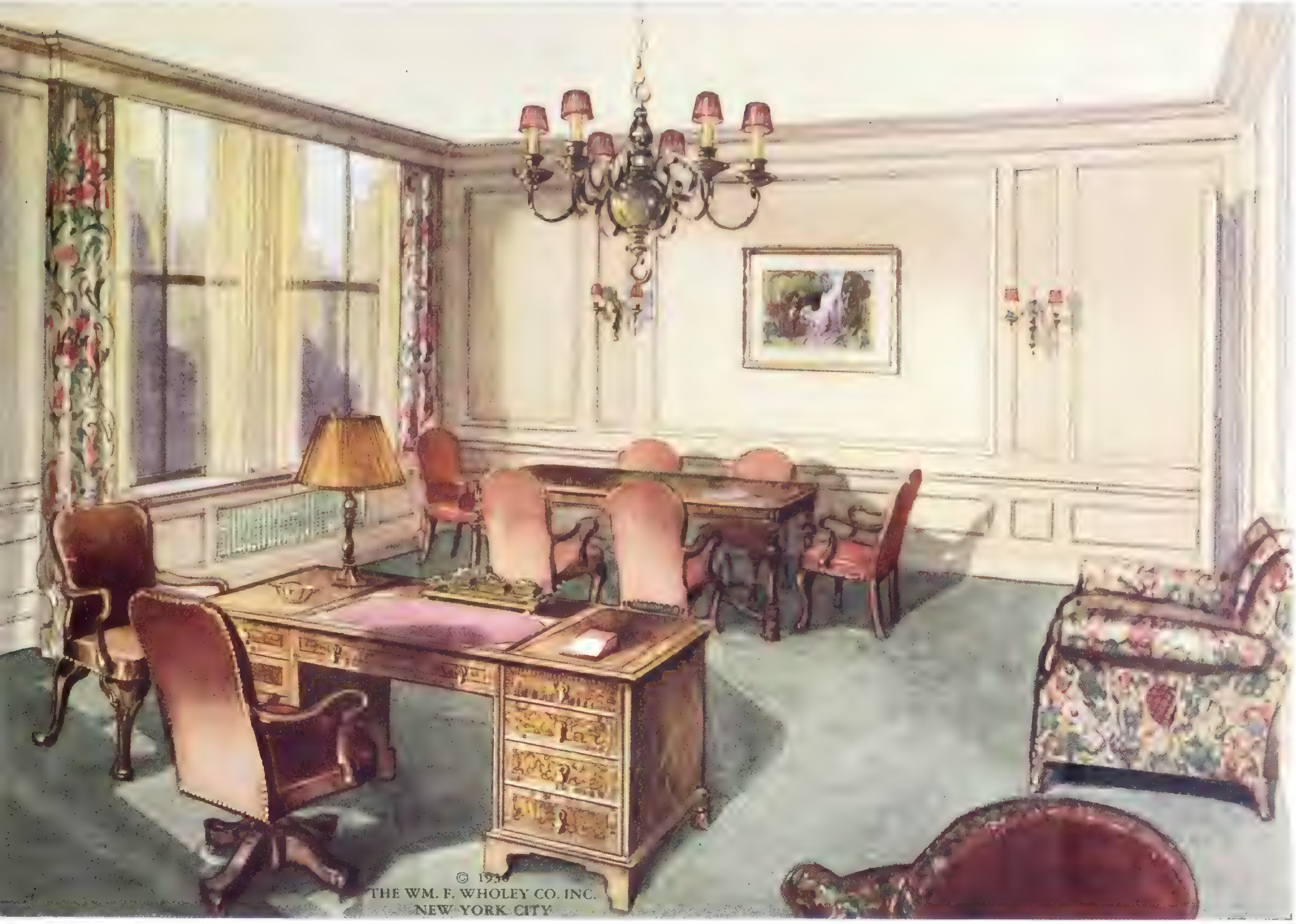
¶ This Bank has prepared a blank which facilitates comparison of the Cleveland district with your present or proposed location in ten prime particulars. Copy of this blank will be sent on request.

GUARDIAN TRUST COMPANY

CLEVELAND, OHIO

RESOURCES MORE THAN $165,000,000

©G. T. Co.


© 193
THE WM. F. WHOLEY CO. INC.
NEW YORK CITY

ffice of John M. De Voe, President, U. S. Tobacco Co.

This Matter of Better Offices

Contrasting those of yesterday with the work of the William F. Wholey Company, ve find vision—experience—skill, as the ingredients of successful modern office design.

CONTRAST today's executive office with that of twenty years ago, or even ten. What do we find as yesterday's ideal? ireen velvet carpet, red mahogany desk—ncompromising—with massive chairs to natch; polished cuspidor, and equally polshed square brass feet on everything. Efciency ruled. Standardization was glorified. o room for individualism.

Then something happened. A young furiture salesman discovered that an office was fter all a *room;* that it was not just occupied ut *lived in!*

Why shouldn't an executive's office be made s livable as his study at home? No reason exept that "it hadn't been done." So Mr. Wholey tarted to make converts of a few corporation officers, bankers, and men in the professions.

Visitors in these first offices, decorated and furnished by Wholey, were quick to sense the soothing effect on nerves and disposition, the easier concentration, clearer thinking, quicker "meeting of minds", gained through these happier, quieter, more human surroundings.

Slowly at first, then ever accelerating, grew the demand for better offices as a business investment. The Wholey organization have maintained the lead in their field by knowing business and its needs, as well as period design and color harmonies.

Before a "client's sketch" (such as is reproduced above) is even roughly projected, an analysis is made of the business, the man, his position, responsibilities, and the types of visitors he will receive, as well as the physical layout of floor space.

Only then, is a decorative scheme adopted and a sketch submitted for approval. Wholey execution is as thorough as their planning and includes, under unified control, construction and decoration, selection of floor coverings, lighting fixtures and furniture—transforming bare walls and ugly beams into offices that reflect the personalities of its occupants and add inspiration to their work.

Details of this service, which has revolutionized taste in offices, and specific recommendations are gladly explained to any FORTUNE subscriber, without obligation. The William F. Wholey Company, Inc., 11 East 36th Street, New York.

COROC

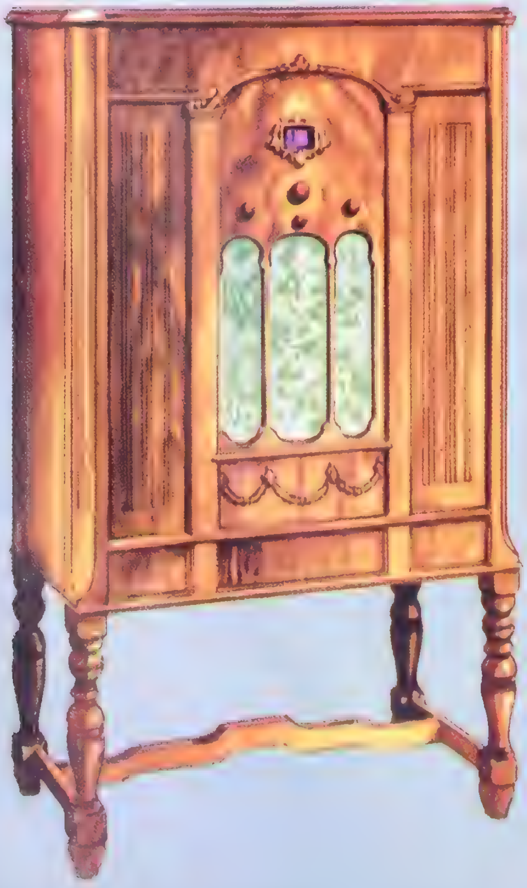
IN FINEST RADIOS, BEAUTY OF TONE IS MATCHED BY BEAUTY OF APPEARANCE WITH

IS THE TRADE-NAME OF A VARIETY OF FINISHES FOR SPECIFIC USES, PLEDGED ALWAYS TO DO EXACTING JOBS PERFECTLY... AND ECONOMICALLY

COROC

RADIO FINISH

SUPERIOR QUALITY—BOTH IN APPEARANCE AND DURABILITY—IS ACHIEVED SIMULTANEOUSLY WITH ECONOMY of PRODUCTION



DEEP lustrous, richly-warm, more permanently beautiful protective finishes are accompanied by less delay between sealing and finishing coats, less tedious and less costly surfacing and quicker-to-pack cabinets. For the automobile industry, for aviation, for refrigerator manufacturers, for accident-free floors, and for many other uses, COOK'S COROC finishes are providing definite improvements and economies, as can be readily demonstrated. Manufacturers are invited to consult us, without obligation, about their own specific finishing problems.

COOK PAINT & VARNISH COMPANY

FACTORIES IN CINCINNATI, DETROIT, ST. LOUIS, KANSAS CITY,
HOUSTON AND FORT WORTH
BRANCHES IN PRINCIPAL CITIES

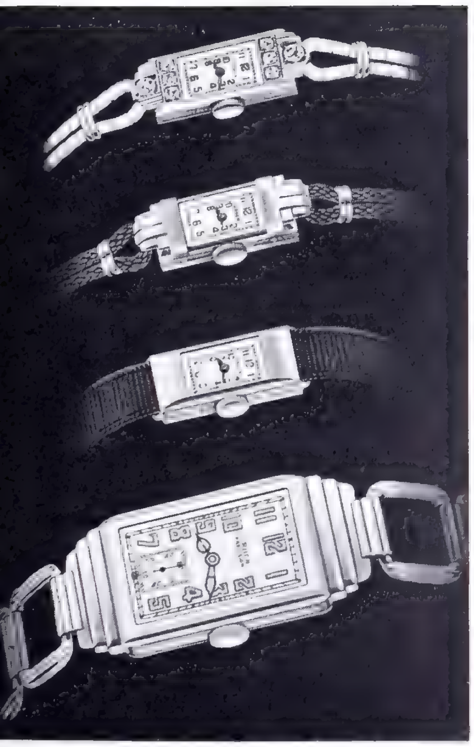
New!—even to those who "have everything"

THE GRUEN CARRÉ

At a touch of the button, this unusual new Gruen discloses the time. When open it sits upright. For men and women, in white or coin gold finish, or smart leather coverings, $55 to $65

To this old guild craftsman, too, *inner* quality was the true measure of watch value

CHOOSE the watch of inner quality , , modern style , , honest price!



Three new Gruen timekeeping Baguettes, and a new Gruen Quadron. At top—Longueville, *8 diamonds set in 14 kt. solid white gold, tubular gold cord, 17-jewel movement, $275; second*—Lille, *14 kt. satin finish solid gold, silk cord, 17-jewels, $115; third* — Normandie, *smart tailored design, solid gold, 17-jewels, $85; below*—Dartmouth, *Gruen Quadron, 17-jewel* PRECISION *rectangular movement, with adjustable link band, $85*

FOR the one who heads your Christmas list—the gift of a beautiful watch. But do not choose for beauty alone. Look deeper for that rarer thing—for *inner* quality.

In a Gruen Guild Watch—all the beauty you could wish! The beauty of *true gold*—not the cheap hardware metal that masquerades as gold.

Beauty of design, too. For the Gruen Guild has always led in design. They were first to make an accurate thin watch, first to introduce the wrist watch into America.

But this beauty is more than case deep. It marks an *inner* quality born of guild craftsmanship; a skill, a passion for accuracy inherited from the old guild masters.

That is the essence today, as for centuries, of Guild craftsmanship. That is why Gruen timekeeping is almost uncanny in its accuracy, as proved by observatory tests, and by actual timekeeping service among hundreds of thousands of men and women.

That is why Gruen Watches are never cheapened to meet a price, but are built to exacting standards of *inner* quality that uphold the finest Guild traditions. When you give a Gruen Guild Watch, you are giving the greatest value your money can buy.

Go to the Gruen Jeweler nearest you, who displays on his window the Guild Emblem shown below. This emblem appears only on the store windows of *professional* jewelers, those who put quality and honest prices above "get-rich-quick" profits.

Ask to see the watches shown here and many other fine Gruen Guild creations priced from $27.50 to $3500.

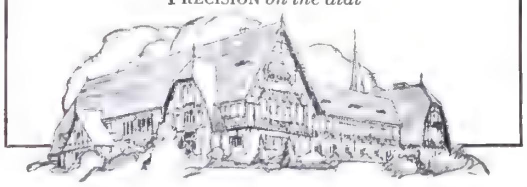
Gruen Watch Makers Guild, Time Hill, Cincinnati, U. S. A. Largest manufacturers of fine watches exclusively—engaged in the art of fine watchmaking for more than half a century. Branches in various parts of the world.

PRECISION

Trade Mark Reg

This Gruen pledge mark is placed only on watches of higher accuracy, finer quality and finish—none less than $65

For the finest *of watches, look for the mark* PRECISION *on the dial*



Listed in the Classified Telephone Directories of the larger cities under "Gruen Guild Watches" is the name of your nearest Gruen Jeweler. His store is marked by this Gruen Service Emblem

GRUEN GUILD WATCHES

Off the Record

The Unsinkable

THE city of Denver, Colorado, delights to pay homage to its own particular goddess, The Unsinkable Mrs. Brown. As legendary as Paul Bunyan but as real as Pikes Peak, she is a lambent flame in the Denver consciousness. Or a forest fire. She has swept through Colorado life since the early days of Leadville and Cripple Creek, pushing her less dynamic husband into prominence, opulence, and a degree of mystification which he escaped only in death, a little over a decade ago.

No one, it appears, knows the Christian name of The Unsinkable Mrs. Brown. Her signature is always Mrs. J. J. Brown, commemorating a personality practically forgotten except as her husband. He was never known as J. J. anyway. Leadville Johnny was his name, discoverer and exploiter of the Little Johnny mine, which produced some $10,000,000 worth of silver. Leadville Johnny was likable and easy-going. Those who remember him doubt if the $10,000,000 would have lasted long without the capable management of The Unsinkable. Leadville knew her as the boss of the Little Johnny, and when in later years they moved to the Brown Palace in Denver (named for no relation of Leadville Johnny), they put on a great show.

From the most dramatic episode of her career she emerged with her sobriquet. She was a passenger on the *Titanic*. When things happen, she is almost certain to be there. Someone, panic-stricken, nearly succeeded in stampeding the passengers. But Mrs. Brown raised her voice (Colonel Paddock of Boulder says it is one of the heartiest voices he ever heard) and laughed the hopeless fellow out of countenance. "There's no danger," she shouted, although she knew very well that the boat was going down. "It simply can't go down, because I'm on it and I'm unsinkable." She continued her banter while the lifeboats were being loaded and was among the last to accept a place in the last boat of all to be launched.

The heroic personality of The Unsinkable has also some impressive cultural aspects. She is in a fair way to become the Lorenzo de' Medici, or rather the Mrs. Jack Gardner of Denver. Already she has made Eugene Field's old home into a children's library, and now she is arranging to turn her own home on Pennsylvania Avenue into an art museum for the city. "I plan to copy as nearly as possible after the Beaux Arts of Paris," she declares. "My dear friend, the Duchesse de Vendôme, lives next door, you know, and I often see the old building from her windows. I love it." The principal exhibit in the museum will be a collection of the Comtesse de Noailles' poems, every volume a first edition presented by the Comtesse to Mrs. Brown, who now lives in the de Noailles' palace. Of late Mrs. Brown has added to her already considerable Parisian renown by her interpretations of Sarah Bernhardt. She gave her first Bernhardt rôles under the auspices of the Duchesse de Vendôme. "It was a curious thing," she later observed, "but soon after, I went to a fortune teller here in Paris who told me that I am the reincarnation of a famous spirit now residing in Père Lachaise, the French cemetery where Bernhardt lies. I was so excited, I walked right out of the place and left my sable on a chair."

MRS. J. J. BROWN

She is often accused of being a grandstander, but those who know her best insist that it is unconscious. She is notably generous and is guided in her philanthropies only by her emotions. She gives freely when it appeals to her, and that is the end of it. And her giving is usually just because she thinks the recipient would like it. Just before the British set out for America to challenge the *Enterprise*, The Unsinkable Mrs. Brown sent The Unsinkable Sir Thomas a "Colorado shamrock" as a lucky piece to wear during the races and was thus many weeks in advance of Will Rogers in showing the "world's best loser" that he had supporters in America.

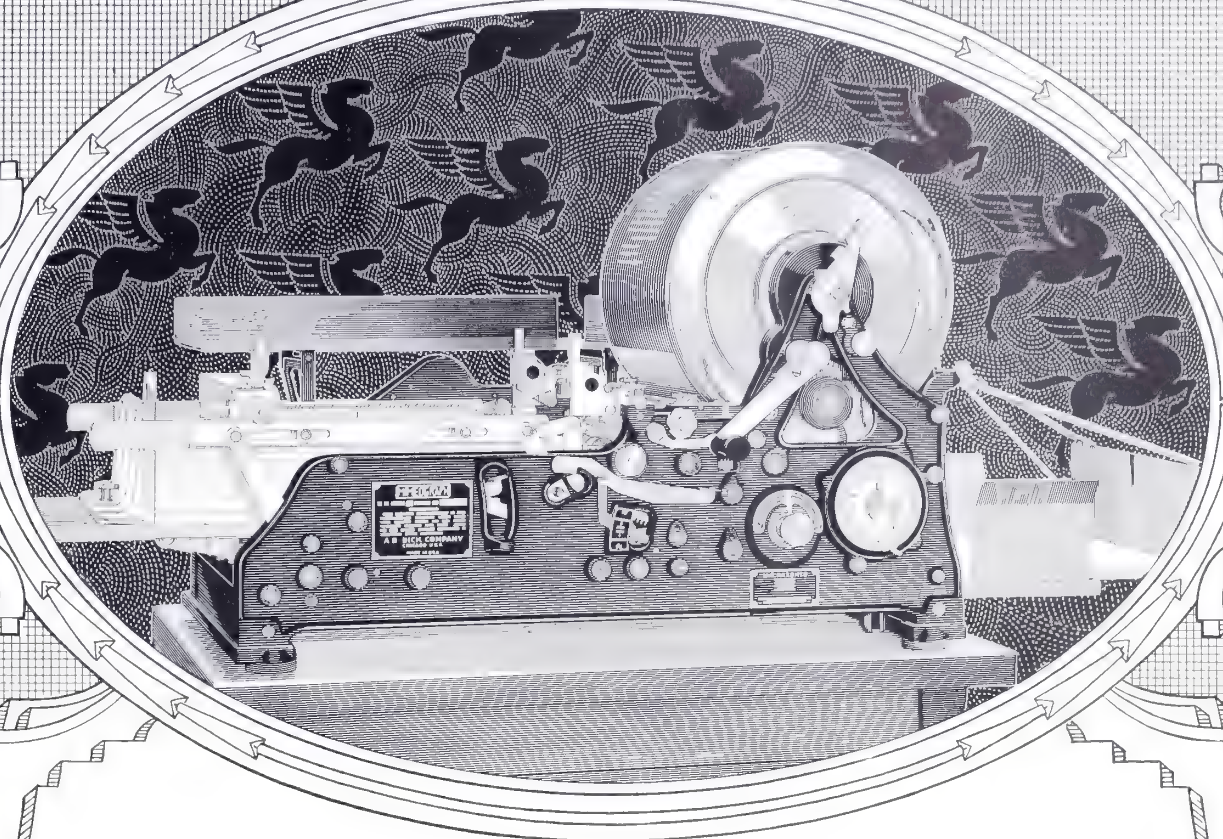
Spider and Tooth Tree

FROM their homes which line both sides of Forest Street in South Manchester, Connecticut, each year on Thanksgiving, Howell and Frank and Richard and Horace and Clifford Cheney with their families, and Russell and Philip and Mrs. Helen Bayne (who was a Cheney—Knight Dexter's daughter) converge upon Cheney Hall on Hartford Road. There they meet the Cheneys from Hartford Road: Frank Jr., George, Mary, Robert, Marjory, Dorothy, Austin, Charles, Leslie, and Mrs. Maisie Cheney (the widow of John Davenport [Dave]). And William from his house on the corner of St. James and Park. And Mr. Harry G. Cheney from his house on Main Street.

Their purpose is that which the day orders—a family party. Cheneys have celebrated Thanksgiving annually since 1636 when John Cheney settled in Roxbury. They have been fruitful. They have multiplied. And they have replenished the earth. They have made South Manchester. They have made America's silks. And they have lived in comparative amity upon a square mile of ground for a century and a half.

From a family where the seventh son of a seventh son is not unheard of, an occasional member can be spared to politics or the arts. But broadly speaking, since the day when George's eight sons began manufacturing sewing silk in 1838, all Cheneys have gone into Cheney Brothers' silk mills. Colonel Louis Rickmond Cheney, leading citizen and onetime mayor of Hartford, is an exception. The late H. Bushnell Cheney, whose head devised and whose Ford transported the Jitney Players, was another. But most Cheneys go to public school (Cheneys built it) in South Manchester, then to Yale (nine have been tapped for Skull and Bones), finally return to Cheney Brothers' offices (down the road from Cheney Hall) on Hartford Road, and go to work. Of the seven company directors, seven are Cheneys. Of the company's six divisions of "horizontal control," five are headed by Cheneys. (The sales head was imported from New York in 1927.) FORTUNE will discuss Cheney Brothers and their relation to the silk industry in a later issue.

Recent years have seen some recessions from the paternalistic position once boldly assumed and vigorously maintained. Many a Cheney non-silk subsidiary, such as gas, traction, and sewer systems, has been sold in whole or in part to the town of Manchester or to public service companies. The schools have been relinquished also. And rayon, at first denied inclusion in the Cheney Brothers' scheme of silken things, has been admitted. But the Cheney Thanksgiving party, the apotheosis of the Pilgrim Fathers' most universally adopted idea, goes on like Hop Brook and will go on, presumably, like the



UNIQUE SPEED

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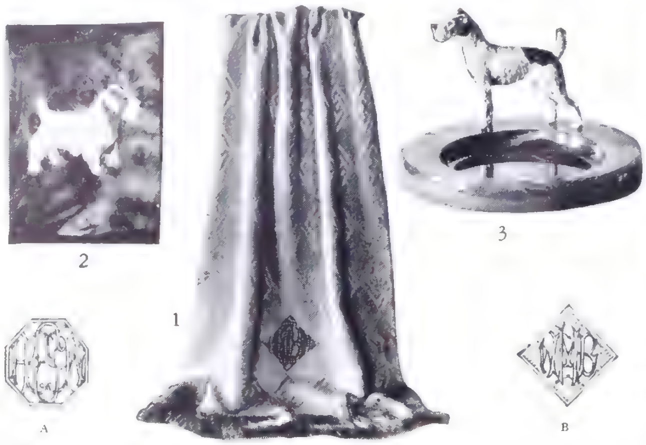


1. White crepe silk EVENING MUFFLER, imported, $15.00. Monogram A, $8.00. Monogram B, $9.00.

2 CIGARETTE CASE of hand carved Thuya wood (pocket size) $20.00.

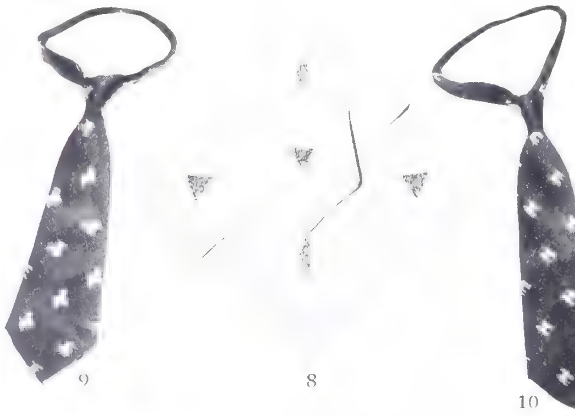
3. ASH TRAY of Brazilian onyx with bronze figure, $30.00.

4. SMOKING JACKET of velvet with grosgrain silk lapels, imported. Blue, black and mulberry, $5[illegible].

5. CRYSTAL LINKS hand carved, $50.00.

6. POCKET KNIFE of sterling silver, $5.00.

7. RULER PENCIL of sterling silver, telescopic, $7.00.



8. LINEN HANDKERCHIEFS, cut out single initials embroidered in France, $2.50.

9-10. CRAVATS of rep silk from England with contrasting woven figures, $4.00.

Mail orders are given careful and prompt attention

ILLUSTRATED BOOKLET ON REQUEST

F.R.TRIPLER & CO.

MADISON AVENUE AT 46 STREET · NEW YORK

Off the Record—*Continued*

brook of copy book fame, forever. The groaning board is no figure of speech on this occasion. One may eat himself into a stupor, it is said, and not become unduly conspicuous.

After such a meal, one must do something to fight off gastric discomfort. Wherefore the entire family takes part in games which all can enjoy, notably a curiously involved one known as Black Spider. In it, one of the uncles (usually Frank D.) is sent out into the hallway where he drapes himself with as many cloaks, mufflers, *et alia*, as will cling to him, puts overshoes on his hands, mittens on his feet, and contrives by as many additional devices as are available to make his appearance grotesque and terrifying. Meanwhile, one of the Cheney aunts has been selected for the part of "mother." She names each of the forty or more children Sunday, Monday, Tuesday, and so on through the week. She calls them to her and then, selecting one child, says, "I am going to market. Now, my little Monday child, don't let Black Spider steal my little Sunday child while I am gone."

As soon as she has gone, the Black Spider comes in upon all fours. The children scream and scamper to far corners or hide under tables. But the Black Spider, like a good Royal Canadian Mounted Policeman, always gets his man. And the Sunday child is abducted.

The mother then returns and spanks the Monday child and joins in the cries of grief and desolation that attend the cruel work of the Black Spider.

During this part of the game, the Black Spider is busy making the Sunday child into a pie. Directly thereafter the mother goes to the bakery and buys the pie. When she comes to eat it, she immediately cries out, "This tastes like my little Sunday child. Go home, go home, Sunday child." By this abracadabra, the pie becomes a child again and scampers from the bakery (which is the stairway) to its original position in the group shouting, "Cats and dogs, cats and dogs!"

Then they do it all over again.

The origin of the game is as obscure as its logic. But it is played year after year among squeals of delight.

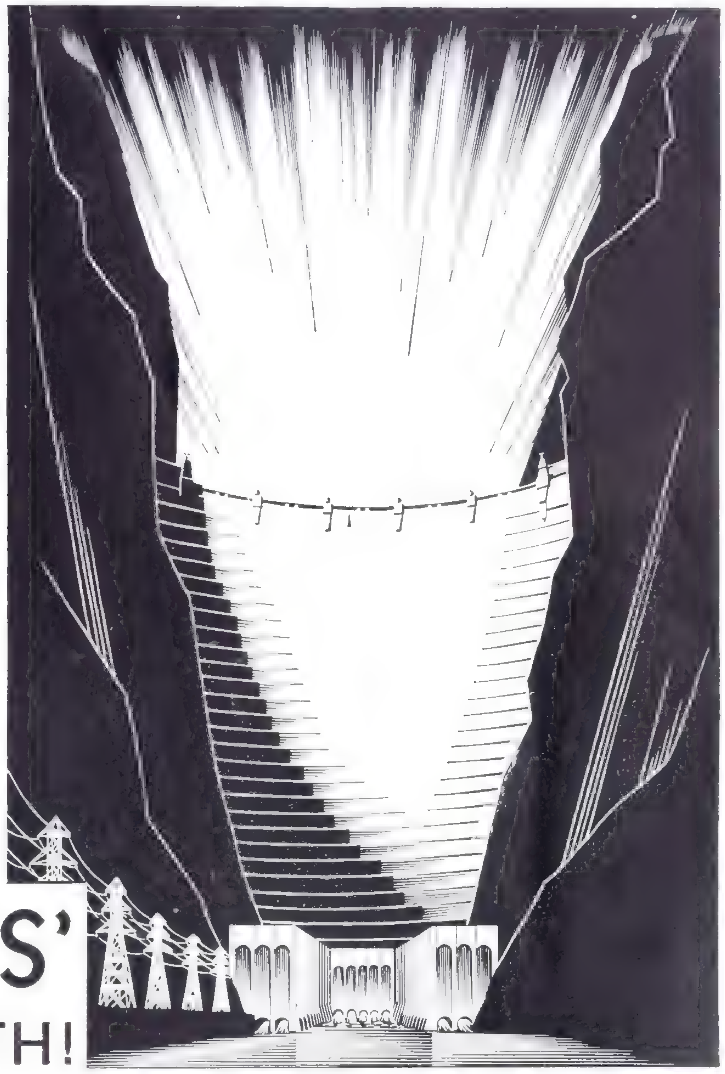
Also illogical is another Cheney family custom that centers in the Tooth Tree which grows in front of the home of the late Frank W. Cheney. For two generations each Cheney has deposited his or her baby teeth in this tree, each tooth in turn as it came out. Child by child—and tooth by tooth—they have come to the tree, taken a knife, bored a hole in the trunk, inserted the tooth and covered it with a plug of soft tar from the road if the tooth came out in the summer, or with chewing gum in winter.

Not a great while ago the Tooth Tree began to languish and turn sere. The Davey doctors were summoned, and they made their diagnosis. A major operation was indicated, said they. The rotting core of the tree and all extraneous matter would have to come out. Immediately the family was in an uproar, which was finally quieted by compromise. The operation proceeded on a modified scale. That is to say, such matter—but only such matter—as could be taken without disturbing a single tooth was removed, and the unguents customary for the treatment of trees applied.

King of Quincy

THE title of New England's oldest active golfer may well go to Theophilus King, of Quincy, Massachusetts, who at eighty-six still pursues the game. He always plays with three caddies: one to carry clubs, one to watch the ball, and one to build tees. Wreathed in billows of Bismarckian whiskers, he takes a daily drive in an ancient electric automobile chauffeured by Mrs. King, who is eighty. In his time a most eminent man of business, he still retains the presidency of many a New England corporation, notably the Granite Trust Co., whose skyscraper is one of the glories of Quincy's skyline. He uses his office there mostly to administer the King Family Fund which he established in 1912 as a means of distributing his wealth in charitable works. Among other beneficiaries of the fund are the forty-one churches of Quincy, each of which receives $100 yearly from it. Mr. King never drinks, smokes, or swears. A staunch prohibitionist, he offered a large cash prize several

STARTED!



BOULDER CANYON PROJECT

and a New Era in LOS ANGELES' INDUSTRIAL GROWTH!

WITH THE DRIVING of a silver spike into a railroad tie on September 17, 1930... the continued development of the Los Angeles industrial area is guaranteed for generations to come.

Between the massive shoulders of Boulder Canyon, billions of added wealth will pour into the Southwest . . . millions of new population . . . unlimited low cost water and power. This new source of water and power will create tremendously rich new markets, besides stabilizing the phenomenal population growth disclosed by the 1930 census. And Los Angeles is assured its position as a world leader in profitable and low cost industrial production.

Planning your Pacific Coast plant requires consideration of the Boulder Canyon project . . . the two are inseparably welded. Foresight today promises rich rewards when this gigantic development is completed, the manufacturing importance of today's Los Angeles will be trebled in the immediate future.

> *Secretary of the Interior,* RAY LYMAN WILBUR, *said regarding the future benefits of the Boulder Canyon project:*
>
> "It is as if our country had suddenly had a new state added to it, for the new and wider use of this controlled water will care for millions of people and create thousands of millions of wealth."

Bureau of Power and Light engineers are organized to render exceptional consultation service. Upon request, a very complete survey of your water and power requirements will be made in a comprehensive, confidential report.

BUREAU OF POWER AND LIGHT
City of Los Angeles

FROM ONE MAN TO ANOTHER

In itself, the superb craftsmanship of Hermès originations in fine leather is a source of keen pleasure to discriminating men. More than that, their unmistakable air of distinction, and their internationally famous name make Hermès creations gifts of rare appreciation to the cosmopolite or sportsman.

CREATOR IN LEATHER

HERMÈS OF PARIS INC.

1 EAST 53rd STREET, NEW YORK

24 FAUBOURG, ST. HONORE, PARIS
CANNES, BIARRITZ, SAUMUR, CHANTILLY

years ago for an epithet that all good citizens could apply to those who break the Eighteenth Amendment. "Scoflaw" was the word he finally chose out of the thousands that were submitted. But Mr. King's liking for bizarre nomenclature is not limited to anti-prohibitionists: his son is named Delcevare, his daughter Zayma.

Food for Thought

IT is very probable that when the directors of General Motors meet, many of them travel to the G. M. building in New York in G. M. automobiles. It is also on record that at one important meeting of the original forty stockholders of Drug, Inc., almost all of them vigorously chewed Rexall Dyspepsia Tablets. The directors of National Dairy Products always make use of N.D.P. products at their meeting. In fact, they eat them.

It makes a very gay and sturdy scene. In summer there is complete informality, coats off, sleeves rolled, and the like. There are cold bottles of Sheffield's Grade A on the table from which President Thomas H. McInnerney takes frequent and generous gulps. There is Kraft cheese and sandwich spread and quantities of ice cream. Just outside the directors' room is a large refrigerator in case the food within the room should too quickly be consumed. Mr. Kraft may often have made an important decision between mouthfuls of a sandwich seasoned with his own mayonnaise dressing. Undoubtedly Mr. Flick of the Franklin Ice Cream Company (Kansas City) has courteously congratulated Mr. Supplee on the excellence of Supplee Ice Cream. And Mr. Hovey of the General Ice Cream Corp. (Schenectady) has promised that for the next meeting he would ship some of *his* ice cream. From all sources it is reported that the directors eat heartily and with great conviviality. It must also be a satisfaction to them to notice there are millions of people in the U. S. whose taste in dairy products so closely approximates and follows theirs.

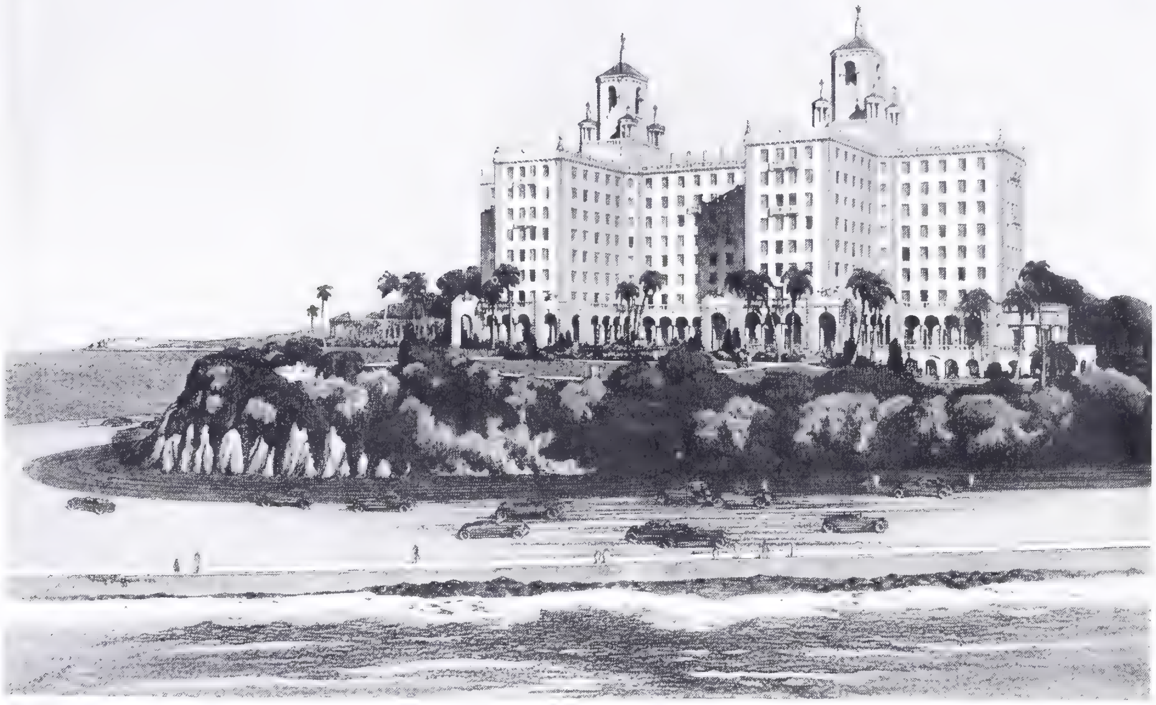
Hats

OF THE various shops that line the first floor of 247 Park Avenue in Manhattan, that of John Cavanagh, Ltd. looks least like what it really is. Mr. Cavanagh sells hats, but so discreetly that a wanderer into his store would first believe himself in a gentlemen's club or in the great hall of a small English castle. Paneled walls stretch to the lofty white ceiling; the Cavanagh coat of arms is blazoned over the huge fireplace. It is only the second or third glance that detects the two incongruities: a small glass case containing a dozen or more hats; several gentlemen's canes and a few more hats on the carved wood table.

With so rich a decor for his commerce, it is not surprising that Mr. Cavanagh's hats and clientele are of the best. Here buy Edward F. Hutton and the Morgan partners; here is fitted Mr. John Hartford of the A. & P. The majority of Cavanagh hats are made to order. If you have once walked into the shop you can thereafter order by telephone, for Mr. Cavanagh and his invaluable store manager, Mr. List, have kept an accurate file of the size and shape of your head and of your predilections in the matter of color. Mr. Cavanagh's trade does not rely upon advertising (although occasionally a modest notice will appear). His clients have spread his fame by word of mouth, and practically all his customers know one another. Records show that the average customer (there are almost 2,000) buys three new hats a year at an average price of $50 for the three. Ordinary felt hats average from $15 to $25. Perhaps a hundred customers buy $100 Panamas a year and twenty buy the $200 Panamas.

Mr. Cavanagh's shop is unrivaled in the country, for no one else has cared to specialize only in the most expensive of the hat trade. However, Mr. Cavanagh is president of Cavanagh-Dobbs, Inc., a holding company for Dobbs & Co., through which he competes with other hatters. A thorough sportsman, Mr. Cavanagh takes greatest pleasure in the accomplishments of his sons. (Mr. Cavanagh married Agnes Garvin, sister of Mr. Francis P. Garvin.) Two of them are prominent in Yale athletics, the third, a student at the Priory School, is a member of the Fairfield Hunt.

Something luxuriously
NEW



THE NATIONAL HOTEL OF CUBA
HAVANA - CUBA

Under the direction of
FRED STERRY, *President*
The Plaza, NEW YORK
WILL P. TAYLOR, *Manager*

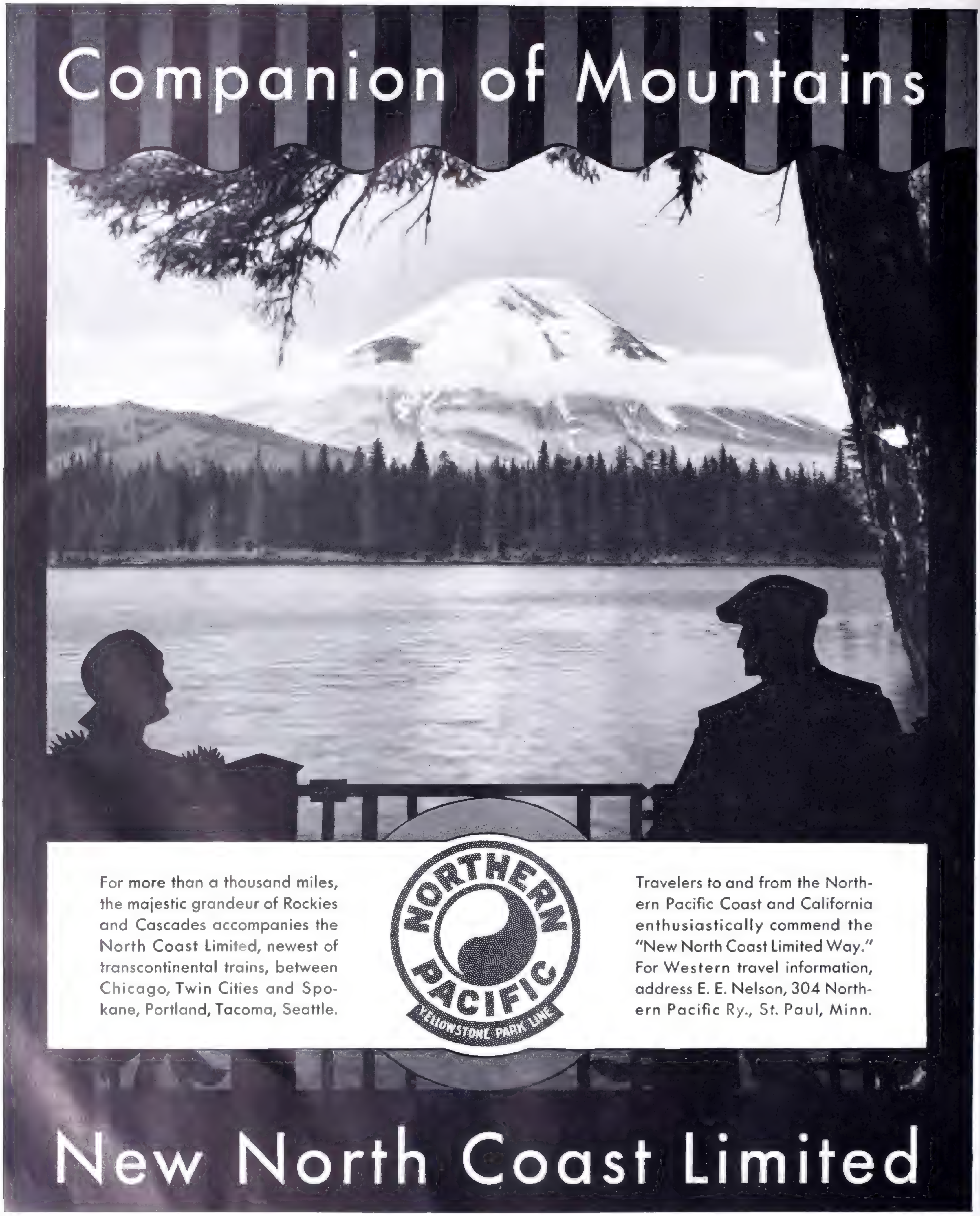
OPENS
DECEMBER
·15·
1930

When sun and amethyst seas are at their best . . . when chic Americans are leaving winter in the cold for the Paris of the tropics . . . for that brilliant moment the National Hotel has timed its opening. The Plaza and Savoy-Plaza of New York have set their duplicate in luxury on the Malecon . . . in the super-fashionable section of Havana . . . stone's throw from the very center of gaiety, yet beyond the tumult of a great city.

Seventy-five feet of palm-shaded altitude turns on cool Caribbean breezes. You dine on the smartest of terraces . . . or in a salon of silver, splashed with color-mad flowers of the tropics . . . just to remind you that this is Havana, not Monte Carlo or Cannes . . . while Paris-minded chefs lean toward the exotic in cuisine. A special brokerage office brings Wall Street into the hotel . . . and you sleep (if you can find the time) or entertain expansively in rooms of regal proportions . . . as cool as the sea itself.

And when you're not gaming at the casino or playing crack golf on palm-edged courses . . . .or swimming in the private pool . . . you'll be dancing on polished parquet . . . in gatherings notable by a generous sprinkling of diplomats. In fact, the National Hotel's paraphernalia for smart-world pleasures simply cannot be exhausted. Obviously you should arrange to be in Havana this winter.

Reservations may be made at the Plaza and Savoy-Plaza, New York



Companion of Mountains

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Travelers to and from the Northern Pacific Coast and California enthusiastically commend the "New North Coast Limited Way." For Western travel information, address E. E. Nelson, 304 Northern Pacific Ry., St. Paul, Minn.

New North Coast Limited

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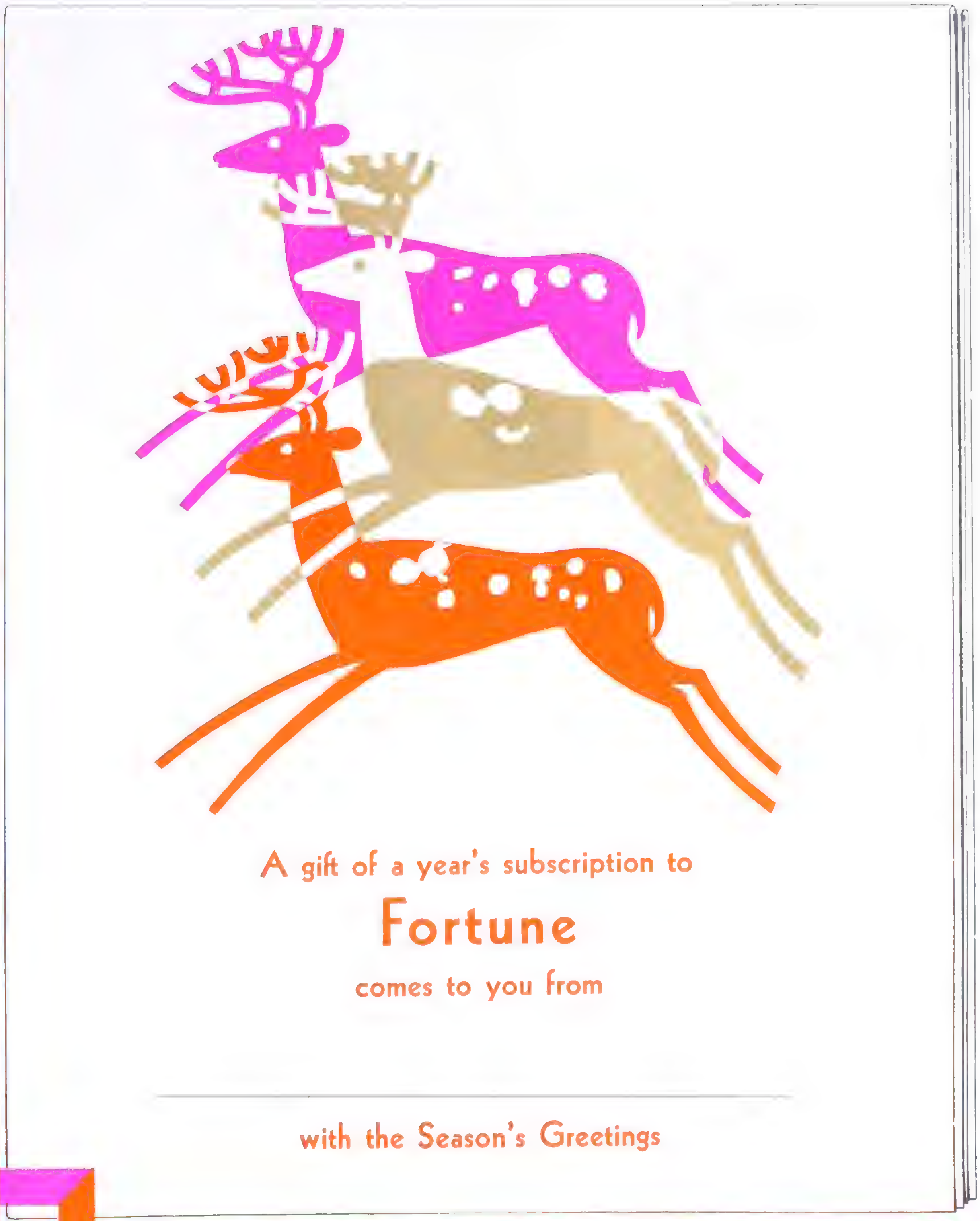

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Fortune

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with the Season's Greetings

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The white jade flower bowl, from the collection of Emperor Chien-lung, is dated about 1750. The candlesticks of translucent pale sea green jadite are statuettes of the Goddess Kuan-yin.

✧

The vase of this lamp is twenty-five inches high. On a ground of turquoise hue are painted scenes of the court of Emperor Chien-lung (1736-1795).

A pair of jade lanterns with delicately carved and pierced silver gilt mounting. The little clock is of fine, white jade. Each vase has a spray of flowers and foliage carved from semi-precious stones.

✧

This figure of the Goddess Kuan-yin, bearing peaches of immortality and the elixir of immortal youth, is eighteen inches high, of uniform, warm, rich grass-green jadite. A jade phoenix, perfectly crowns this stately composition.

Perhaps *once in a lifetime... perhaps thi*

Christmas... you wish to give a gift that only a certain person will

prize... a gift that is more than beautiful, more than precious... that i

fact, the quality of immortality. What happier choice than the exq

jade carving or porcelain vase first presented three hundred years ago

Manchu emperor to a favorite princess. Certainly a gift that has

a memory fresh through three centuries will be a gracious reminder

noble giver. To give the gift of an emperor, to bestow the heritage of t

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of the receiver. Edward I. Farmer will be very happy to help you se

from his famous collection of XVII Century Chinese jades and ceran

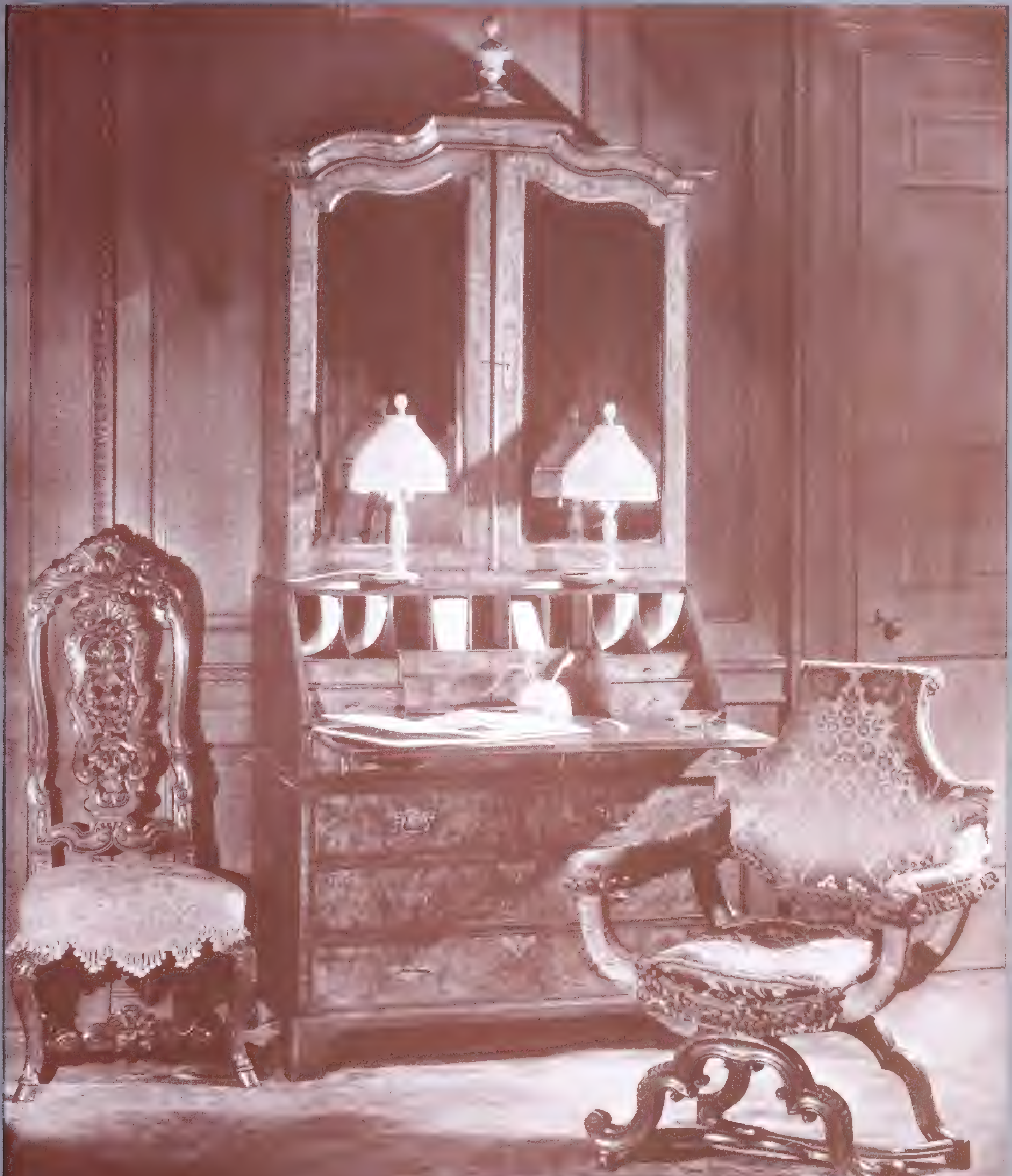
this one perfect gift. And to partially prepare you for these wonders,

Mr. Farmer send you his Christmas Brochure... which also includes m

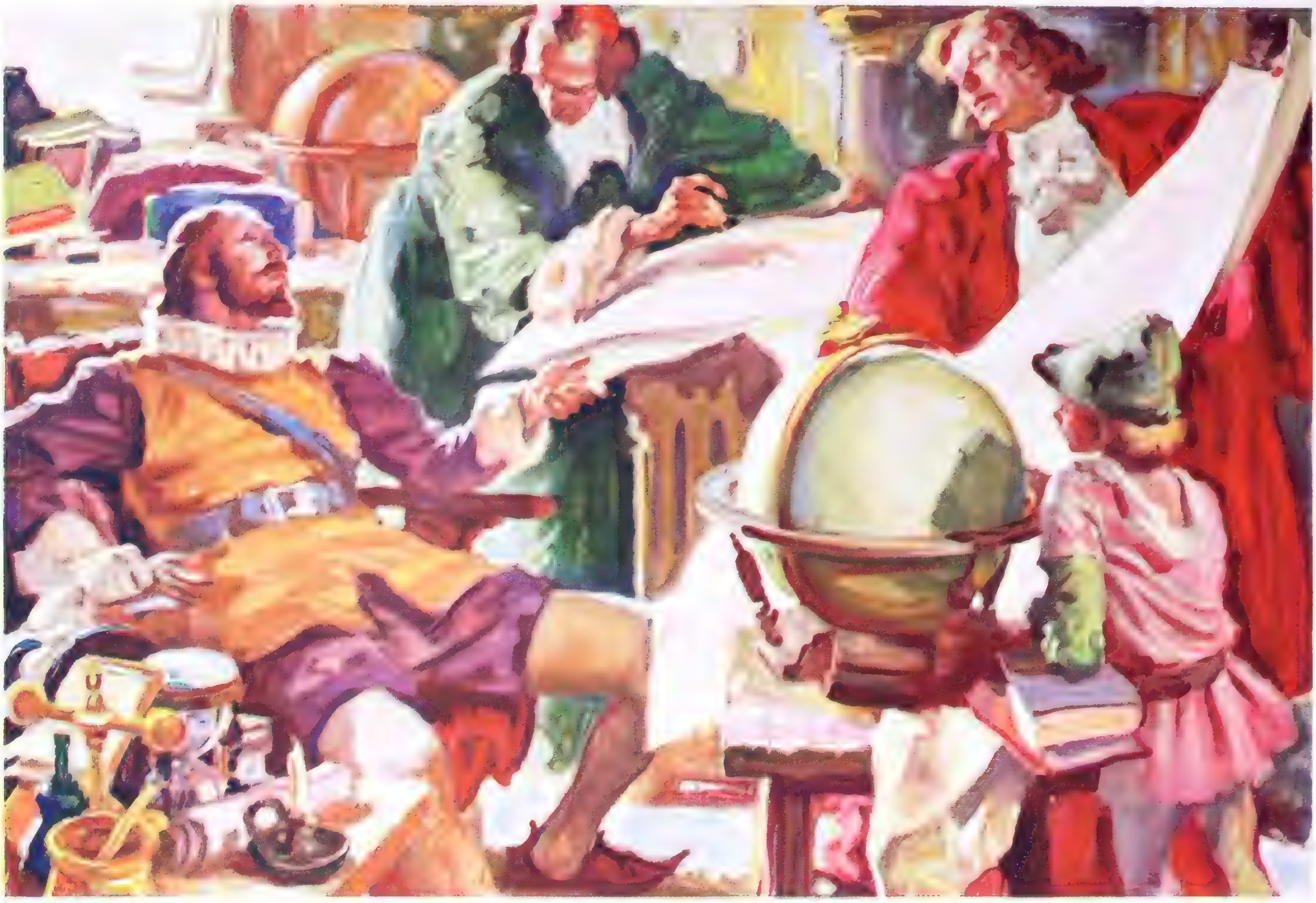
plates of his remarkable collection of XVII and XVIII Century Engl

furniture? Edward I. Farmer, Inc., 16 East 56th Street, New York Ci

FARMER



A group in the Christopher Wren room, part of the famous Jarmer collection of XVII and XVIII Century English furniture



For a Discriminating Clientele

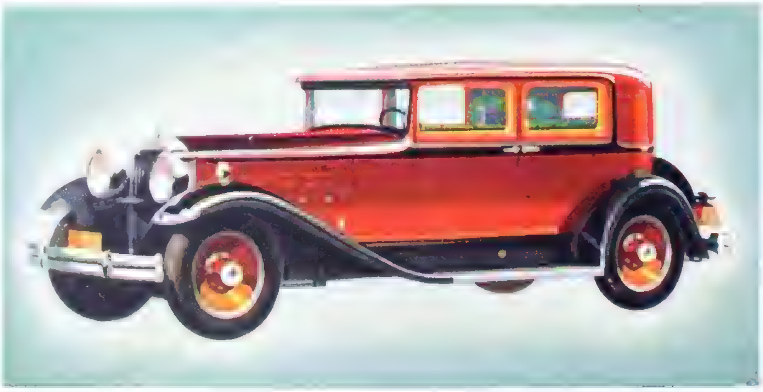
To the great cartographer Mercator and his son, in Flanders, came the great navigators, kings and princes of the late sixteenth century for those charts and maps so priceless in planning exploration, or new campaigns of conquest

IN all Packard's thirty years of building fine motor cars for a discriminating clientele Packard distinction has never been more pronounced, more enviable than it is today.

For Packard cars, ever beautiful and distinguished, offer what the world at large now acknowledges to be the utmost in luxurious transportation. And Packard ownership—whether of a De Luxe, an Individual Custom model or a model of the superb Standard Eight line—carries a definite and well recognized prestige.

Nor is Packard Eight ownership expensive. Any Packard man can, and will be pleased to show you with detailed figures that it really costs *no more* to have a luxurious Packard Standard Eight than any other car of like size and power—if you will but follow the example of most Packard owners and keep your Packard a little longer.

You can easily find out from any Packard dealer whether *you* are paying Packard ownership costs for your present motoring. If you are, then why not enjoy Packard luxury and prestige—why not *have* the Packard you have always wanted?



PACKARD

ASK THE MAN WHO OWNS ONE

Volume II

Fortune

Number 6

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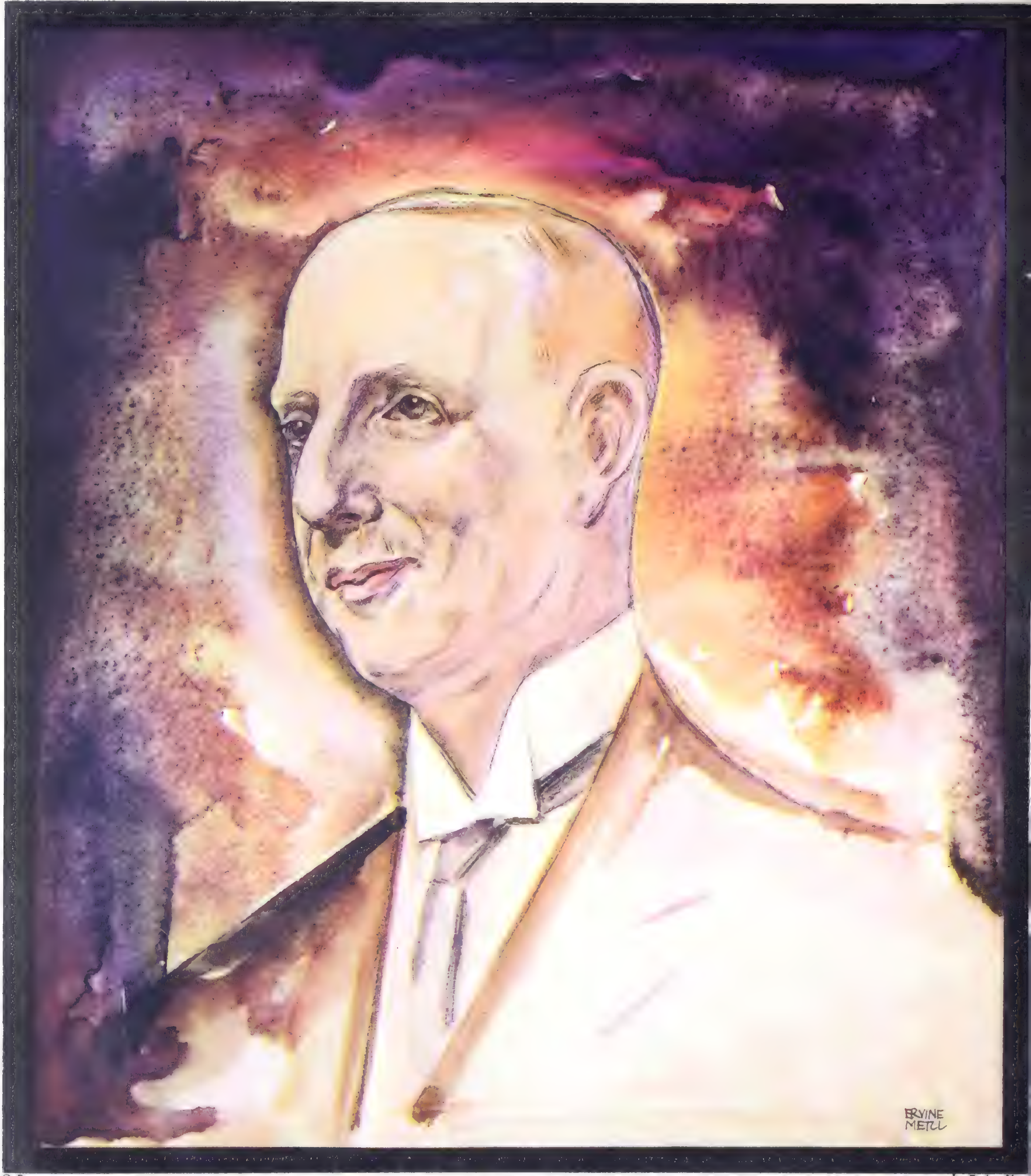


© Fortune

by Ervine Metz

PORTRAIT OF COLONEL SOSTHENES BEHN

CREATOR OF THE INTERNATIONAL TELEPHONE & TELEGRAPH CORPORATION
AND, TODAY, ITS INTERNATIONALLY-KNOWN CHAIRMAN

Behn Brothers

. . . was, first, the scribbled daydream of a ten-year-old boy; was, later, a banking house which dealt in sugar by design and telephones by accident; was, still later, the energizng force of one of the world's largest corporations; and was always a devoted, indestructble partnership.

A TEN-YEAR-OLD boy sat at a table scribbling. Some one strolled over and glanced at the paper. He read: "BEHN BROTHERS—SOSTHENES AND HERNAND BEHN." The boy looked up. "Hernand and I are going into business," he said.

• • •

The new century was in its swaddling lothes when Sosthenes Behn grew his beard. t was a protection rather than a gesture; his ntire career seemed momentarily to hang upon it. For Sosthenes was a New York banker, the acting head, in fact, of a foreign xchange department. And he didn't look ike a New York banker. Thus the beard grew, a mark of dignity and maturity. It acomplished its purpose, and its possessor was both amused and proud. The year was 1901, nd Sosthenes Behn was not yet quite twenty.

• • •

Infinitely complex forces had been at work upon the boy. There was, first of all, the matter of his blood. His curious name deived from the Greek and meant "life trength"; he was born on the little West ndian island of St. Thomas; but the principal strains which coursed within him were French and Danish. Together with Hernand, he had gone to Europe to be schooled—first to Corsica and later to Paris. By birth and training, these Behns were cosmopolites. They were adepts in nearly every tongue spoken by civilized man. And deeper than their multi-linguism lay the rich mixture of their inheritance. Upon this they could draw at will, and upon it they have drawn freely throughout their lives. Than Sosthenes Behn is no Frenchman more French, no Englishman more British, no Spaniard more Spanish, and through it all, no American more American. Today, when the International Telephone & Telegraph Corporation negotiates in the world's capitals from Bucharest to Nanking, this world-sympathy and world-understanding are of incalculable value. The Behns travel incessantly. But they are never foreigners.

• • •

Sosthenes rather fancied the beard, and he kept it a long time. Through a trip to Mexico for a group of New York bankers, through the beginnings of his career in Porto Rico. Here, in 1906, the brothers realized their ambition. They took over their stepfather's sugar business, incorporated themselves as Behn Bros., Inc., and became successful sugar factors. As such they were favorably, but not conspicuously, known in New York. Their entrance into the communications business, which came about when the Porto Rican Telephone Company fell into their hands through a friend who had taken it in payment of a bad debt, caused no international stir. Presently, when Cuba invited them, they had two telephone systems instead of one. But when the War came, they were still bankers. Sosthenes was thirty-two, and Hernand was thirty-four. The brothers were verging on middle-age and their records, while respectable and successful enough, were not really as glittering as one might have forecast on that day in 1901.

They had double claims to American citizenship. They had sought and obtained citizenship in their own right, and the U. S. purchase of St. Thomas from Denmark automatically enfranchised them. Sosthenes did distinguished work for the Signal Corps in France, was the chief of staff for General Russell, the A. E. F.'s chief signal officer, and just before the Armistice moved to the First Army. Later, in Paris, he sat with three other colonels (including Colonel A. H. Griswold, later to become one of the Behn lieutenants

WITH POMP AND CIRCUMSTANCE

. . . in the persons, left to right, of General Anido, vice president of the Council of Ministers, King Alfonso XIII, the Papal Nuncio, U. S. Ambassador Ogden H. Hammond, and the Marqués de Urquijo did Colonel Sosthenes Behn (extreme right) attend the opening of the Spanish-American telephone service in 1928.

International

WITH WHITE HOUSE SIMPLICITY

. . . fifteen months later, was service opened over the 5,300-mile circuit between the U. S. and the Argentine, Chile, Uruguay. Between President Hoover and Colonel Behn is sitting Walter S. Gifford, president of the American Telephone & Telegraph Company.

in I. T. & T.) upon the adjustment board which liquidated the Signal Corps' European property. Both France and the U. S. decorated him.

· · ·

It was in 1920 that the brothers began to move in a large way. In that year, they made their deal with A. T. & T. to lay a cable from Cuba to the mainland, connecting the growing island system with the telephones of the mainland. It had been projected before the War, and preliminary work on the mainland end had been started. But not until 1920 were the negotiations closed. This deal, which was small enough in comparison with the brothers' later operations, at the time was of the most tremendous significance. It gave them confidence. It crystallized their plans into the immediate organization of the International Telephone & Telegraph Corporation. Sosthenes and Hernand were encouraged to come to New York to look for support. The whole vast plan was set in motion.

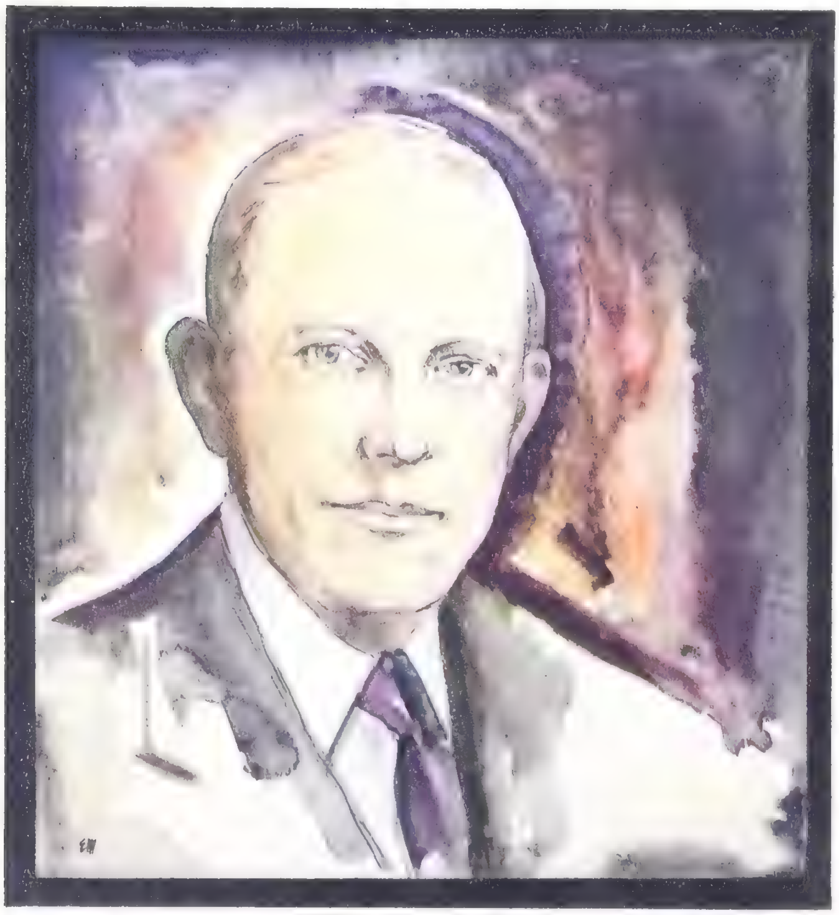
It was to tap a deep wellspring of initiative. In Madrid, in 1924, Sosthenes battled for the Spanish concession. The Dictator and his advisers insisted that the company reconstructing Spain's telephones should also use Spanish equipment, made in Spain. Sosthenes was no manufacturer. The telephone plant in Cuba and Porto Rico had come from the large companies in the U. S. But Sosthenes signed the contract nonetheless. He went to his good friend A. T. & T.: "Will your foreign manufacturing subsidiary, International Western Electric, put up a plant in Spain and make the equipment for us?" It would not. He turned to his great competitors in Europe: "Will you make equipment for us?" They would not.

The entire Spanish deal seemed on the verge of collapse. Sosthenes pondered, had a thought, rejected it as wild, found no other alternative, formed his resolution. Again he went to his good friend A. T. & T.: "Very well, you will *sell* us International Western Electric?" Yes, they would. How much? Thirty millions. It was a staggering price for the young company, but Sosthenes paid it. In bonds which A. T. & T. turned over to J. P. Morgan & Co. Thus at one vigorous stroke, the Behns had become large manufacturers and had attached to themselves the most powerful banking support in America. And not at all by design, but because the terms of the Dictator's concession had to be met. And because of the Behn resourcefulness and the Behn daring.

· · ·

Sosthenes is a tall, military figure of a man. The luxuriant beard has given way to a grayish mustache which one does not notice much. In his magnificent French oak office in the tower at Broad and Beaver streets, he is very much the American industrialist. Of tremendous energy, he also energizes others. The most noticeable quality of the I. T. & T. building is its vigor. Here are the many executives whom the Behns have gradually drawn to them. Almost without exception, their offices reflect the nervous electric energy of Sosthenes's office. The man has infused himself everywhere, whether because one likes him or because one is dominated by him. His concentration upon his work is phenomenal; he is without competing interests. And one may make an appointment to see him as easily at seven in the evening as at ten in the morning. He is sure to be still at his desk.

Yet no one was ever more charming or more suave than Sosthenes Behn. From day to day and from year to year, he is unchanged. However volatile the Latin blood within him, the face he presents to the world is always composed, pleasant, confident. He has few enemies; he himself will not admit that he dislikes a half-dozen people.



© Fortune

PORTRAIT OF HERNAND BEHN
PRESIDENT OF THE INTERNATIONAL TELEPHONE & TELEGRAPH CORPORATION

Sosthenes is an arresting figure, a great industrial adventurer whose light is too strong to be hidden under even the bushels of his own modesty. But he is only half of Behn Brothers. He is, to be sure, the more exciting half, the more glamorous half, but still only half. For across from his office in the high tower is the office of Hernand, and Behn Brothers is today as real in spirit as it was when the ten-year-old boy scribbled it on paper, as real in fact as when the two proudly set up business in Porto Rico. The brothers are in perfect balance. If Sosthenes has more daring, Hernand has more intuitive caution. If Sosthenes has boldly seized each successive opportunity, gathering property after property into the huge I. T. & T. system, Hernand has quietly taken into his care the real first-born and has made the Cuban Telephone Company the most successful telephone unit of them all. Hernand is no industrial Don Quixote. He is cerebral, even reluctant. But his loyalty to his brother amounts to a passion. And his functions as half of Behn Brothers are not to be underestimated.

· · ·

Behn Brothers have built one of the world's most spectacular enterprises. In the process they have become both famous and rich. Their offices are perched on that conventional pinnacle of wealth and success, the skyline of Manhattan. But Sosthenes and Hernand Behn have not lost their inheritance. Their faces turn often to the east and to the south. To the warm islands which nurtured them. To St.-Jean-de-Luz, where their villas are bright under Latin suns. To Paris, where their houses stand beside the houses of other Parisians. They are still world dwellers, and other strains than the Anglo-Saxon still disturb their blood.

· · ·

They are, withal, Americans. The enterprise made possible by their partnership, however closely attuned to the spirit of a score of nations, is yet an American enterprise, and they themselves do not confuse their internationalism with the essentially American framework upon which it now hangs. This framework is something far more substantial than their accustomed New York life, more significant than their American wives or their children. In May, 1921, when he stood at the threshold of his career, Sosthenes married blonde, lovely Margaret Dunlap of Philadelphia. They have two sons, Edward and William. This family provides Sosthenes's one major interest outside the company. Hernand's son is at an American school and his daughter was prominent among last year's New York débutantes. But even more American than this normal life is the driving plan which embraces their every project. As they are the dominant personalities of I. T. & T., so is this plan the vast system's dominant theory. It can be described briefly as an American communications system. What this means and how it is being realized are told in the following pages.

I. T. & T. Ends a Brilliant Decade

And finds: its telephones multiplied, its factories growing, its competition awakening, its world expanding. What John Cutler would do and what Newcomb Carlton won't do. An Asiatic projection and a skirmish in the long war to win the love of the South American businessman. And, finally, these far-flung incidents linked in the Behn plan.

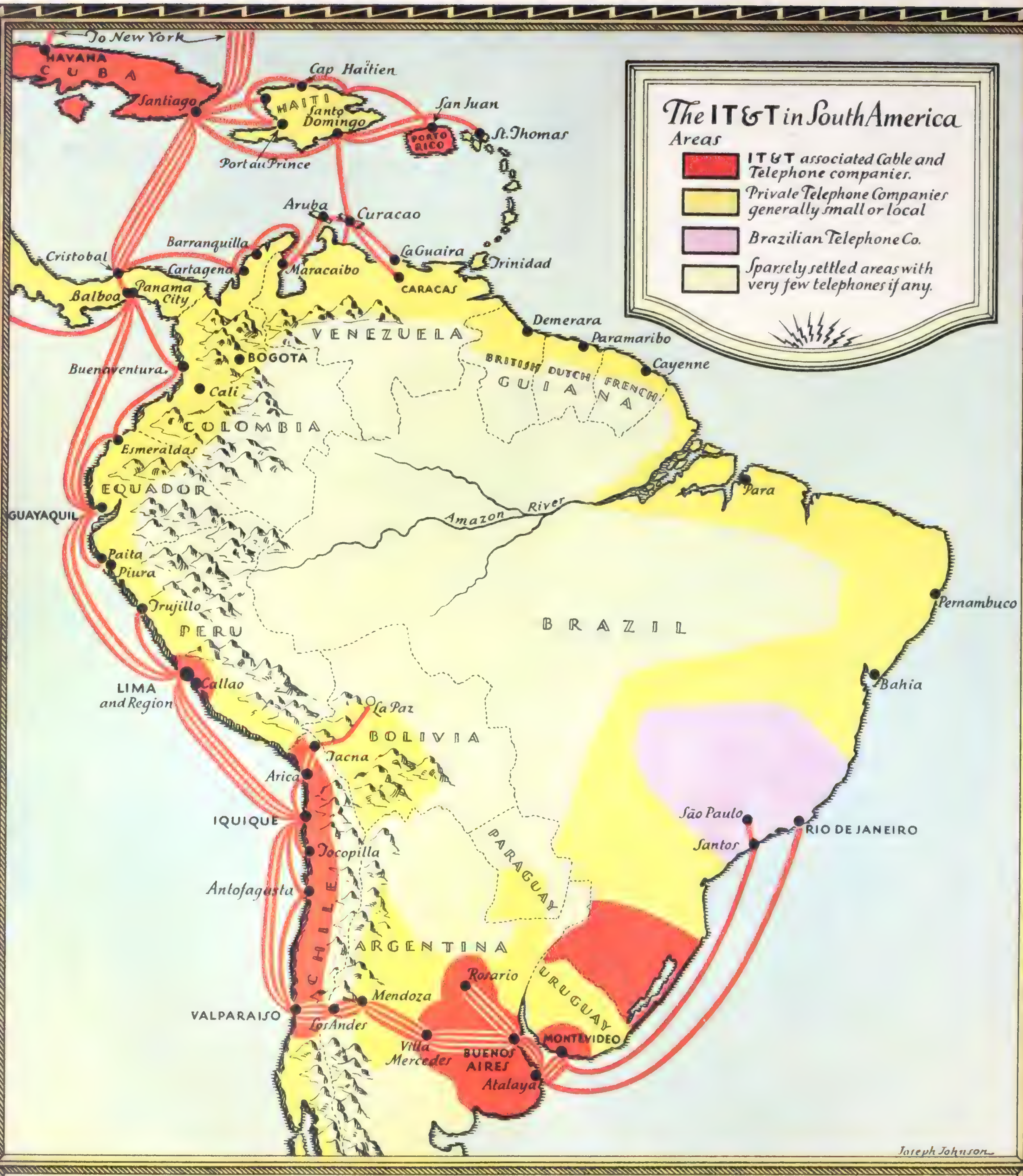
IN 1921, the Brothers Behn came to New York to launch the International Telephone & Telegraph Corporation. The Cuban and Porto Rican telephone companies had made steady advances through the War and post-War years, adding telephones at the rate of 4,000 a year and bringing net income from under $400,000 in 1915 to over $1,000,000 in 1920. But this was of interest chiefly to the Cubans (and Spaniards) who shared ownership with the Behns. Impressive as was the company's name, substantial as was its income, it operated in a territory where depression was almost a general rule, and it was enriching no one who could open up the vast credit reserves of Wall Street. The Behns wanted New York support for an American stock issue. They had an exceedingly hard time getting it. The National City had brought out the Cuban bond issue of 1921 and was their friend, but did no business in stocks; the Colonel's own Guaranty was going through a hard year; Morgan was not in the picture at all. While the Behns had an assured position in New York, sponsors for an issue of the new company's common stock were not easily found. It was not until the brothers met an able young man by the name of Cutler, just back from the War and with big ideas, that they began to see light. Cutler was then a most aggressive factor in the house of E. B. Smith & Co. He was profoundly impressed by the Behn personality and the Behn plans, and he devoted the best part of 1922 to the effort to give them a footing in the Street. At length, he convinced his partners that the project offered their house a big chance, he persuaded Dominick & Dominick to go along with him, and in April, 1923, these two houses brought out an issue of 50,000 shares of I. T. & T. common at $68.50 a share ($3,425,000). This was the real beginning of the years of expansion. The Behns never ceased to be grateful, and Mr. Cutler did his house the best single turn it ever enjoyed.

OFF THE SPANISH COAST

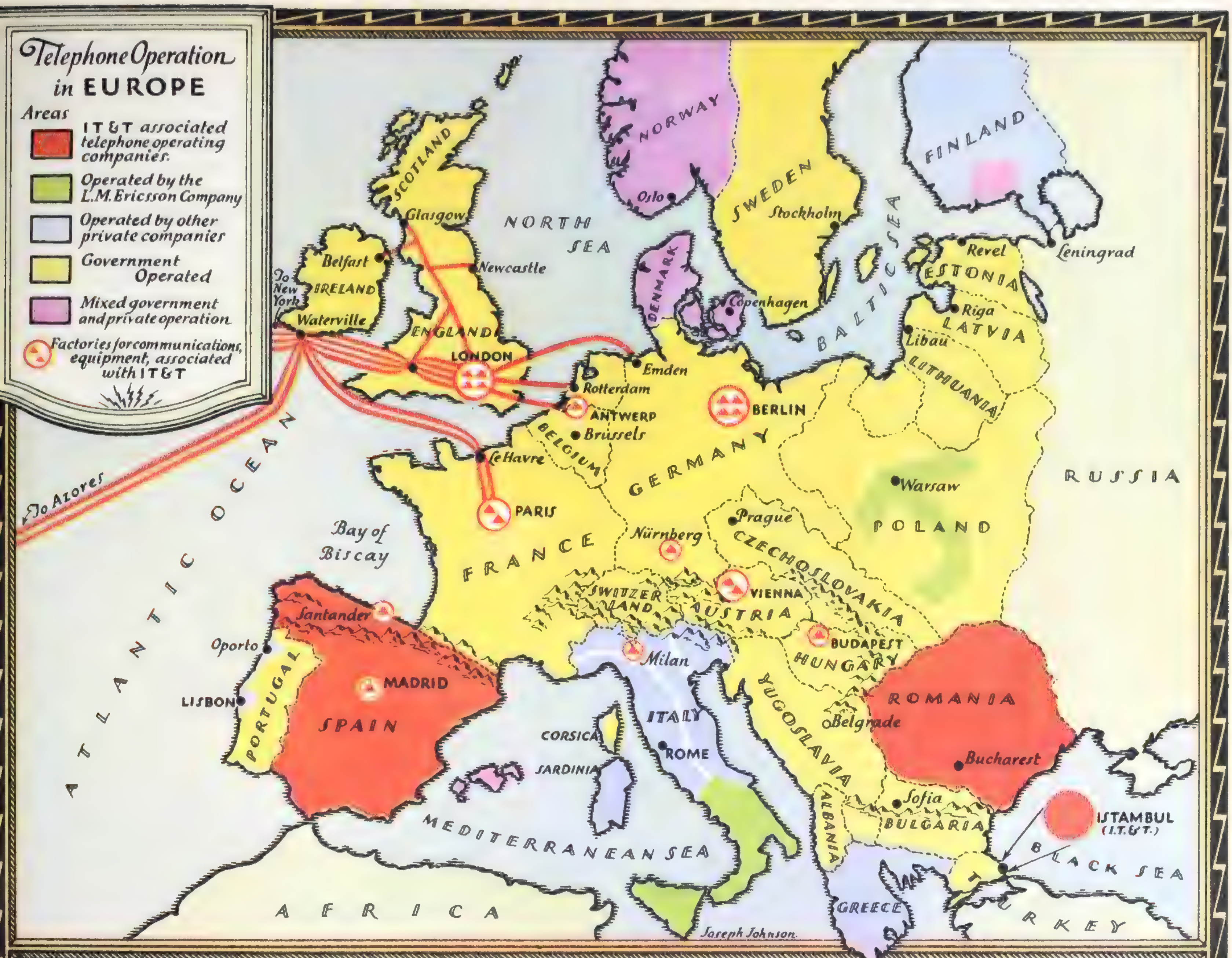
. . . bobs this cable buoy. It marked the first dramatic venture of the International Telephone & Telegraph Corporation (see page 42). Today, it is one of hundreds scattered throughout the world.

With the surface record of I. T. & T. progress in the next seven years, American investors became gradually familiar. The record was dazzling. Between 1924 and 1930, plant and property account went from $26,650,000 to $297,700,000, and total assets from $38,300,000 to $535,200,000. Gross earnings were $5,850,000 in 1924, and $100,340,000 in 1929. Net income followed with a jump from $1,930,000 to $17,730,000. And these figures, staggering as they were, represented a program of acquisition which could only be described as sensational. Its chronology appears elsewhere in this article. In general, it transformed the International Telephone & Telegraph Corporation from a telephone operator in two semitropical islands to the largest telephone operator outside the U. S., the second largest telegraph operator in North America, a cable company with one arm vigorously competing across the Atlantic, one arm across the Pacific, and a third stretching to South America, an active participant in the radio scramble, and a manufacturer doing a business of some $70,000,000 a year.

That such spectacular growth should have excited the investor in the boom years is not at all surprising. When, on September 3, 1929, the common sold for $149.25 a share, it was being valued at forty-eight times earnings. On the same day, A. T. & T. sold at twenty-three times earnings, Western Union at sixteen times, and Radio at sixty-four times. A. T. & T. was and is, of course, the world's premier common stock, Radio has enjoyed (or suffered) constant bull manipulation, and Western Union is as much a colorless stock as it has been a colorless company.


The IT&T in South America
Areas
IT&T associated Cable and Telephone companies.
Private Telephone Companies generally small or local
Brazilian Telephone Co.
Sparsely settled areas with very few telephones if any.
To New York
HAVANA
CUBA
Santiago
Cap Haïtien
HAITI
Santo Domingo
Port au Prince
San Juan
PORTO RICO
St. Thomas
Aruba
Curacao
La Guaira
Trinidad
Barranquilla
Cristobal
Cartagena
Maracaibo
CARACAS
Balboa
Panama City
VENEZUELA
Demerara
Paramaribo
Cayenne
BRITISH
DUTCH
FRENCH
GUIANA
BOGOTA
Buenaventura
Cali
COLOMBIA
Esmeraldas
EQUADOR
GUAYAQUIL
Paita
Piura
Trujillo
PERU
Amazon River
Para
Pernambuco
BRAZIL
Bahia
LIMA and Region
Callao
La Paz
BOLIVIA
Tacna
Arica
IQUIQUE
Tocopilla
Antofagasta
CHILE
São Paulo
Santos
RIO DE JANEIRO
PARAGUAY
ARGENTINA
Rosario
Mendoza
URUGUAY
VALPARAISO
Los Andes
Villa Mercedes
BUENOS AIRES
MONTEVIDEO
Atalaya
Joseph Johnson

ALTHOUGH THE AREA OVER WHICH ARE SPREAD THE NETWORKS OF I. T. & T.-CONTROLLED TELEPHONE SYSTEMS IS ONLY A FRACTION OF SOUTH AMERICA'S TOTAL AREA, THESE SYSTEMS INCLUDE OVER 55 PER CENT OF THE CONTINENT'S TELEPHONES. ONLY ONE MAJOR COMPANY—THE BRAZILIAN—IS TODAY OUTSIDE THE I. T. & T. GROUP. HERE I. T. & T. HAS INVESTED ABOUT $110,000,000. AS NATIONAL COMPANIES ARE FORMED, LOCAL INVESTORS BECOME I. T. & T. PARTNERS


Telephone Operation in EUROPE
Areas
🟥 IT&T associated telephone operating companies.
🟩 Operated by the L.M. Ericsson Company
⬜ Operated by other private companies
🟨 Government Operated
🟪 Mixed government and private operation
Factories for communications equipment, associated with IT&T
NORWAY
Oslo
SWEDEN
Stockholm
FINLAND
Leningrad
SCOTLAND
Glasgow
NORTH SEA
Newcastle
Belfast
IRELAND
To New York
Waterville
ENGLAND
LONDON
DENMARK
Copenhagen
BALTIC SEA
Revel
ESTONIA
Riga
LATVIA
Libau
LITHUANIA
Emden
Rotterdam
ANTWERP
Brussels
BELGIUM
BERLIN
GERMANY
Le Havre
PARIS
RUSSIA
Warsaw
POLAND
To Azores
ATLANTIC OCEAN
Bay of Biscay
FRANCE
Nürnberg
Prague
CZECHOSLOVAKIA
SWITZERLAND
VIENNA
AUSTRIA
Santander
Oporto
BUDAPEST
HUNGARY
Milan
PORTUGAL
MADRID
LISBON
SPAIN
ITALY
CORSICA
SARDINIA
ROME
YUGOSLAVIA
Belgrade
ROMANIA
Bucharest
Sofia
BULGARIA
ALBANIA
ISTAMBUL (I.T.&T.)
BLACK SEA
MEDITERRANEAN SEA
GREECE
TURKEY
AFRICA
Joseph Johnson

PRIVATE OPERATORS, INCLUDING THE I. T. & T., ARE MAKING SLOW BUT SURE PROGRESS IN CHANGING EUROPE'S TRADITIONAL THEORY OF GOVERNMENT TELEPHONE OPERATION. HERE CAN BE SEEN THE I. T. & T. NETWORKS, THOSE OF ERICSSON, THE SMALL LISBON AND OPORTO AREAS WHERE THEODORE GARY HAS MADE AN ENTRANCE. BUT MOST SIGNIFICANT ON THIS MAP ARE THE EQUIPMENT FACTORIES, HELPING MAKE UP I. T. & T.'S $70,000,000 MANUFACTURING REVENUE IN 1930

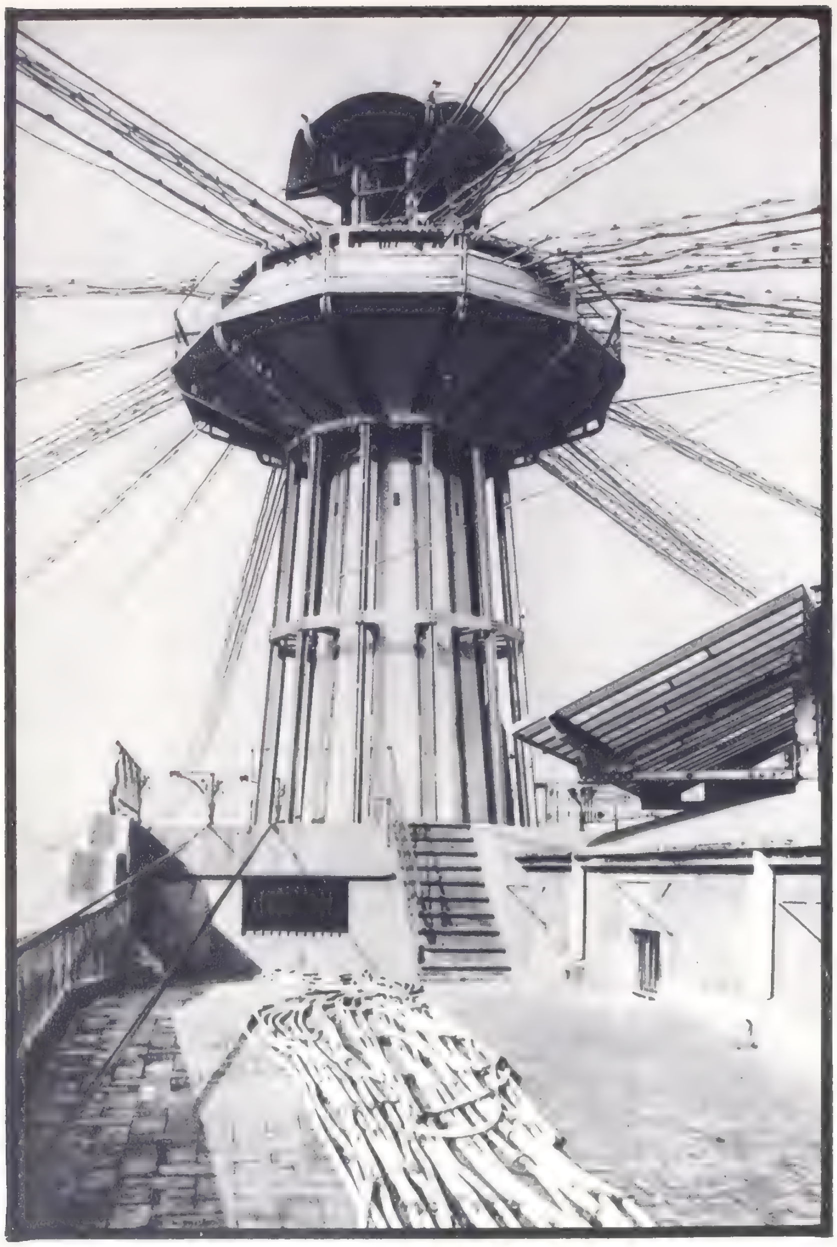
. T. & T.'s tremendous market prestige was ue neither to the public's suspicion of con-ealed earnings nor, in its early stages, to uch organized popularity as Mike Meehan an give a stock. It was due almost entirely to ne repetition, month after month, of stories f I. T. & T. mergers, purchases, concessions. ince January 1 of this year, the New York *imes* has carried more than fifty stories bout the company, a notable publicity ecord for any organization.

As public confidence in expanding com-anies continued to mount in 1929 and lifted ne stock to what now seems unjustifiable evels, so the public pessimism of 1930 nocked the stock to levels astonishingly low. s the company this year will almost cer-ainly cover its $2.00 dividend, the October 10 price of $25.12 represented an amazing reversal of general opinion, a reversal not explicable by such temporarily discouraging factors as the Latin-American revolutions or the fall in the peseta. Rather, it has been the realization, in some quarters fostered, that I. T. & T. has had to pay full prices for its properties, that interest and dividend requirements on the expanded capitalization have increased even faster than the earnings, and that nowhere in the statement of the company can there be found figures to show increased profit on each dollar invested. The world-wide depression has, in fact, overtaken the company and has thrown its current earnings per share of stock to a level lower than in any year since the company was founded.

While these doubts were not unnatural, they were founded upon an incomplete understanding of the I. T. & T. record and the I. T. & T. plans. The record of the Behns in Cuba had much to do with the enthusiasm of the early sponsors of the company. The Cuban record was even then a ten-year record; other records must also be ten years old before the picture will form completely. Next oldest and most typical of I. T. & T. developments is the Spanish concession. It is now drawing to the close of its sixth year. Some idea of progress may therefore come from its study.

* * *

When Miguel Primo de Rivera y Orbaneja announced himself "at the Royal Feet of



BARCELONA IN 1926, BEFORE I. T. & T. RECONSTRUCTION

. . . was Spain's second city and chief seaport. But her telephone service, enmeshed in such an overhead cat's cradle as this, was so bad that there were only 2.5 telephones for each 100 inhabitants. And it took half the day to call Madrid.

BARCELONA IN 1930

. . . with underground cables and automatic plant of the most modern type, has 4.4 telephones for 100 persons. (But Chicago has 30.) And it takes five seconds to call Madrid.

Your Majesty" and besought Alfonso's signature to a decree authorizing the closing of I. T. & T.'s contract, he bore witness to a number of highly important things. First of all, he paid tribute to the extraordinary talents of Sosthenes Behn. Although Colonel Behn had hastened to Spain after the first, ground-breaking stock issue in 1923, he found both the Ericsson Company (Sweden) and Siemens & Halske (Germany) bidding for the Spanish telephone system. He immediately took a hotel suite, sent for a corps of engineers, accountants, and even typists, and proceeded to turn himself into a combination of a social Spaniard and an industrial American. Negotiations were long and tortuous; over a period of nearly a year, the terms of the proposed concession were continually being modified. One of the principal reasons for I. T. & T.'s ultimate success lay in the fact that after each modification, Colonel Behn and his staff would sit up all night and have a new contract ready for the government's consideration on the morrow. It was the first application of direct method as Colonel Behn understands it, and it was justified on August 26, 1924, when the contract was signed.

Another fact to which the Dictator testified in his petition to the King was the breakdown in governmental telephone operation in Europe. He spoke of "the heterogeneous character of the system . . . antiquated legislation . . . mosaic of administrative contracts . . ." but he did not do justice to the situation. At Vitoria, a city of some 36,000 inhabitants, the switchboard dated back to a time just fourteen years after Alexander Graham Bell invented the telephone. While some of the 90,000 scattered telephones were operated by private companies, the government controlled the Madrid and Barcelona long-distance systems, producing the most impossible confusion. Subscribers could make calls within the city from their own houses, but if they wished to call another city, they had to go downtown and wait their turn at the long-distance station.

They might wait an hour and they might wait half the day. When at length their calls were put through, they were often cut off with a few seconds' conversation, clearing the circuit for a newspaper or a bank which had leased the wire for fixed periods daily. Even worse than the service was the plant itself. Iron and copper wires paralleled each other in the same circuit. Repeaters, to strengthen weak currents, were unknown. Underground cables did not exist. Wires were strung along housetops and terminated in huge open-work baskets.

It was altogether hopeless, as the Dictator realized, and it was worse than most of the European systems. Hence Spain became the first nation to turn over its entire area to private operation. Italy followed, dividing its territory among four companies (of which Ericsson was one). Rumania is this year's I. T. & T. convert. Others will make the change when national politics permit.

So far as Spain itself is concerned, the experiment must be considered an unqualified success. Instead of the contract's stipulated "average delay of not more than thirty minutes" in inter-station conversation, the new service was quite as rapid as any in the world. The contract called for completion of the system within five years, and while the last provision was not met until one week before August 26, 1929, I. T. & T. had in fact bettered its promises by some 30 per cent of plant. Further, this plant has a good claim to be called the world's best. It is of course idle to compare a 250,000-phone system with the 15,690,000 phones of A. T. & T., but in point of mechanical perfection the Spanish unit surpasses any similar unit now in existence. Telephone service

MADRID

. . before telephone reconstruction, was dotted with these gangling overhead distributing baskets.

INTO THE DELICIAS EXCHANGE, MADRID

. . . underground cables today carry the city's mounting total of messages. Part of the world's best plant, this exchange is one of the reasons why Spain's telephones have more than doubled in five years.

n New York City, for example, is today only about half automatic; Spain is now about 70 per cent automatic. Everything is brand-new and of the most advanced type. On the per-onnel side, the Dictator was naturally anxous that the company should be directed and taffed by Spaniards. While in the peak years 926 and 1927, Colonel Behn sent into Spain a flying squadron of about 260 Americans and other non-Spaniards—his own engineers, engineers borrowed from A. T. & T., accounants, skilled workmen of all sorts—he also ucceeded so well in training the old Spanish employees that there are today only a half-dozen Americans among the 10,831 on the pay roll of the Compañía Telefónica Nacional de España. One is executive vice president, another is chief engineer, a third is comptroler. In spite of its relationship to New York, the Spanish company is an essentially Spansh institution, financed in large part by Spanish investors, operated by Spaniards, and making a substantial contribution to the well-being of the Spanish state.

Thus the physical and personal achievement in Spain. It remains to be demontrated that this rationalization of a country's communications is accompanied by a corresponding increase in traffic. The number of telephones in service has approximately tripled, from under 100,000 in 1924 to about 250,000 in October of this year. This is an important check on the total I. T. & T. increase form 156,000 to 721,000. In 1925, Spaniards poured the equivalent of nickels and dimes to the extent of 275 pesetas into each telephone. By 1929, the flood of coins had mounted to 415 pesetas, and total revenues had jumped from 29,000,000 pesetas in 1925 to what will approximate 80,000,000 this year. A large part (23,000,000 pesetas) of this gain, of course, can be found in the revenues from the toll service. Most visible, perhaps, of the signs of this tide is the traffic over the Madrid-Barcelona circuits. Before I. T. & T.'s entrance into Spain, four iron wire circuits connected these busiest cities. I. T. & T., with some misgivings but with an eye to 1935, put in ten circuits, over which service was instantaneous. Two years ago, it had to install twelve more. The toll call, as a practical proposition in Spain, was invented by I. T. & T.

This has obviously cost money, and I. T. & T.'s investment in Spanish telephones (apart from the Spanish factors) has grown from 140,000,000 pesetas in 1926 to 680,000,000 in June of this year. This tremendous pace was dictated by the terms of the concession, and it would not be extraordinary if the investment had grown faster than revenues of profits. But actually the estimated return has shown a consistent increase, from a low of 4.6 per cent in 1926 to a high of 6.5 per cent in 1930. Under the terms of the concession, I. T. & T. *may* earn 8 per cent (plus 2 per cent for a general reserve) and may adjust the rate structure to bring such a yield. The revamping of the rate structure has proved to be a long and delicate job; it has been complicated by the instability of the peseta (see note at the end of this article); it is not yet complete. But there is every reason to suppose that it will be accomplished and that the 8 per cent return will become fact.

The figures reveal at once the great size of such an undertaking and the eagerness of the Spanish response to it. That return on investment has increased in the face of a forward-looking construction program indicates that I. T. & T. has in Spain for many years to come an opportunity to invest money profitably. Spain is still in the kindergarten grades so far as telephone *use* is concerned.

BETWEEN THE KING AND THE DICTATOR

. . . of Spain, there stretched an embarrassing gap of land and water. The year was 1924. Primo de Rivera was in Tetuan, Morocco, directing the war against the Riffs. King Alfonso XIII was in Madrid. Colonel Behn volunteered to bridge the gap. Within a few days, telephone service was established over the submarine telegraph cables of the Spanish Government, and before the year was out, a new cable was being carried from the cable ship (above) to the Spanish shore (below). This was the first example of I. T. & T. enterprise in Europe. It was a most auspicious opening for the Spanish venture. At the time this cable was laid, I. T. & T. owned a half-interest in the 115-mile cable between Cuba and the mainland. Today, it controls over 66,000 miles of underwater telephone and telegraph cable, carrying thousands of messages each day.

Its 8 phones per 1,000 population compare with Cuba's 22, England's 41, Germany's 50, Canada's 144, and 165 in the U. S. And Madrid's 46 phones match 91 in Havana, 118 in Berlin, 300 in Chicago.

. . .

When local money markets and earnings of the national companies become sufficiently stable, I. T. & T. takes into partnership the people of the countries in which it operates. The Cuban company has $6,071,000 preferred outstanding, for the most part in Cuban hands, and its funded debt of $7,503,000 is held both in the U. S. and in Cuba. Spanish investors have taken up a 300,000,000 peseta issue of preferred stock and about 20 per cent of the common stock in the national company organized to operate the nation's telephones. And the Spanish company has outstanding a funded debt of 100,000,000 pesetas, floated to pay back the I. T. & T. loans.

Thus I. T. & T.'s financial policy in foreign countries begins to take outline. First comes a drive to create earnings, no expense being spared to build for future national development. Then comes local refinancing of a part of I. T. & T.'s investment. But I. T. & T. keeps its equity in the business. The effect of this policy can be seen from a comparison of I. T. & T.'s commitment in the various systems. In Cuba, the I. T. & T. controls a system of 75,000 phones with an equity holding of $13,000,000. There are approximately 200,000 telephones under I. T. & T. control in Spain and in the Argentine. Yet I. T. & T.'s investment in Spain is some $47,000,000 against an estimated $88,000,000 in the Argentine. Presumably I. T. & T. intends to finance further Spanish growth locally and to finance a portion of the Argentine growth in the Argentine investment market as soon as possible. And this program will be duplicated with all the major telephone properties of the system.

. . .

Through the media of Cuba and Spain, we see stretched out the main lines of I. T. & T. policy and the high spots of I. T. & T. experiences in world-wide telephone operation. Since Cuba, Spain is the first job which has had time to show results. Thus

Burton Holmes—From Ewing Galloway

CHRIST OF THE ANDES

. . a monument to peace between Chile and the rgentine towers above the Transandine Railway, hich tunnels through the mountains at 10,452 feet.

lthough a glance at the map on page 38 reeals the extent of I. T. & T. activities in outh America, where it now operates over 0 per cent of all telephones, the most imortant South American company (the River late Company in the Argentine) was acuired only last year, after four years of egotiation. The Spanish performance is the T. & T. model, as to contract, nationalizaon, equipment, etc. There is no obvious eason why Spanish success should not also be uplicated.

• • •

Within this last year, opposition to the pread of I. T. & T.'s telephone operations as won two powerful allies. One is Mr. Ivar reuger, the genius of the Swedish match rust, and the other is the Transamerica Cororation, greatest of bank chains. In point of esources, the two together do not, of course, atch the House of Morgan, which has been e leader of I. T. & T. backers since 1925. ut Mr. Kreuger, buying into the Ericsson ompany, brings resources more useful than oney. Of the ticklish business of dealing ith governments, he has shown himself the ost adroit living master. If he can duplicate ith Ericsson his tremendous achievement ith Swedish Match, bringing into the telehone chain such important links as France, ermany, Hungary, and Jugoslavia (all now overnment-operated), he will leave I. T. & T. a poor second in the European race. But telephone concessions are harder to get than match concessions. Kreuger's Ericsson Company is now in southern Italy, in Poland, and in Mexico (which it divides with I. T. & T.), and none of these properties is comparable to Spain or the Argentine. Against further expansion will be leveled the vigorous competition of the Behns. No such force opposed Mr. Kreuger's marketing of the match.

As for Mr. Theodore Gary of the General Telephone & Electric Corp. and his new Transamerica ally, I. T. & T. seems to be threatened as a manufacturer rather than as an operator. General Telephone (now holding company for Associated Telephone & Telegraph) operates some 250,000 telephones outside the U. S., fully half of them being in Canada (British Columbia), where I. T. & T. has no ambitions, another group scattered through Latin America, which I. T. & T. adequately controls, and only one company of any size in Europe. This is the Anglo-Portuguese, operating in Lisbon and Oporto (see map) and totals only 21,000 telephones. As a manufacturer (Automatic Electric Co.), however, the vigorous seventy-six-year-old Mr. Gary is a force to be considered by both A. T. & T. and I. T. & T. He is a grand old man, a six-foot Kansan, and an able, resourceful maker of telephone equipment. In the U. S., he has fought with Western Electric, and abroad his most notable success has been in England, where he has a large proportion of the country's business.

• • •

For all the activity of Mr. Kreuger, Mr. Gary, and the Siemens & Halske group, the most urgent competitive problem of I. T. & T. is neither in the business of telephone operation nor in the business of making telephone equipment. When, in 1928, the Behns bought the telegraph and cable companies headed by Clarence Hungerford Mackay, they stepped into an exceedingly puzzling situation. Postal Telegraph was then doing only about 17 per cent of the domestic telegraph business, conceding the rest to Western Union without much murmur. After the War, in fact, Postal's principal function was to act as a feeding and distributing agent for Commercial Cables, and while its business increased with the normal trade increase, Western Union was taking the lion's share of each year's new business. The Behns, buying Postal as a necessary step in their world plan (of which more later), were determined to make the company a real power. Mr. Mackay, whose capacity for awakening and holding personal loyalties is exceeded by no American businessman, naturally remained as chief, but about him I. T. & T. put four aggressive young men with A. T. & T. training. Most notable of the four is Colonel A. H. Griswold, a direct-action man who ran the telephone and telegraph systems of the A. E. F. and in that fierce school learned the value of record communications (telegram, cable) as against the telephone.

This new management has created a new company. Postal is now making a determined effort to merchandise itself. It is establishing schools for its messenger boys, it has taken advertising schedules in the country's chief newspapers, and it is attacking, one by one, the industries which carry large telegraph files. A typical effort has been directed, within the year, at the florists' delivery-by-telegram business. First comes a kind of rabbit-out-of-hat performance. At the speakers' table, during a florists' banquet, sit (preferably lovely) operators, each in front of a typing telegraph device known as a printer. Messages go out to florists all over the world; a Postal official explains what is happening, continues to speak until the answers come in. A tremendous hit was registered at the convention of the Florists' Telegraph Delivery Association when a Buenos Aires confrere telegraphed his regret that the florists could not see his exhibition of an obscure azalea. The most spectacular of all the shows, of course, was that evening last June, in San Francisco, when I. T. & T. sent a message around the world in five minutes, thirty seconds, beating the record by some two and one-half minutes. The show (for the N. E. L. A. convention) followed Owen D. Young's great speech on surpluses and in spite of the handicap was a howling success. A recent and important show was given for the Hotel Managers Association.

On the heels of the show, Postal advertises

[*Continued on page 118*]

A MONUMENT TO I. T. & T.

. . . is this iron pole of the trans-Andean line. Not until I. T & T. strung its wires across the mountains in 1928 had one South American capitol spoken with another.

Fourteen Contributors

To I. T. & T.'s great decade. These bankers, operators, and lawyers now sit, with eight others, upon the company's board. The chronology of their arrival is also the chronology of a mighty enterprise.

© Fortune
ALLEN G. HOYT
. . . who, in I. T. & T.'s first years, advanced its cause with the National City.

© Fortune
MARQUÉS DE URQUIJO
. . . who helped bring Spanish money to I. T. & T.'s Spanish subsidiary.

International
EDWARD J. BERWIND
. . . who is most venerable of the twenty-two I. T. & T. directors.

© Fortune
HENRY B. ORDE
. . . who, after the Behns, is the chief of the company's executives.

Underwood & Underwood
CHARLES E. MITCHELL
. . . whose bank handled the Behn financing in Cuba and Porto Rico.

Underwood & Underwood
RUSSELL C. LEFFINGWELL
. . . whose arrival on the board meant the entrance of J. P. Morgan & Co.

© Fortune
GEORGE E. PINGREE
. . . who runs I. T. & T.'s $70,000,000 a year manufacturing business.

© Fortune
JOHN W. CUTLER
. . . who had the vision, in 1923, to bring out I. T. & T.'s first U. S. stock issue.

© Fortune
GEORGE H. GARDINER
. . . who, a great lawyer, is also the company's trusted friend and guide.

P. & A.
CONDE DE GUELL
. . . who is a rich Spaniard, a leading industrialist, and a friend of the Behns.

International
LANSING P. REED
. . . who is a most active partner in Davis, Polk, Wardwell, Gardiner & Reed.

Underwood & Underwood
CLARENCE H. MACKAY
. . . who is a philanthropist, dilettante, and much-loved head of Postal Telegraph.

Underwood & Underwood
JOHN L. MERRILL
. . . who is veteran of, and authority on, cable communications between the Americas.

© Fortune
F. WILDER BELLAMY
. . . whose banking house joined with E. B. Smith & Co. in the 1923 stock issue.

The Cabinet of the Brothers Behn

Iow twenty-two men happened to sit down at the same table.

REACHING out through the air and under the waters, the Behns did not, of ourse, find only wires or cables or factories. They also found the men who strung the ires and laid the cables and built the facories. And the chief of them, the Behns, sat own at a long deal table in front of a patern of $20 goldpieces. Already at the table vere gathered another group—the men who ad been prophetic enough to guess that read cast upon the waters in 1921 (or 1916 r 1923) would return in bountiful measure efore they were too old to enjoy it, and, ineed, before the decade was out. Year by ear, others came to join the group (1929 vas the first year to see no new face at the able); a few dropped out. By 1930, there vere twenty-two such men in the cabinet of e Brothers Behn. The chronology of their rrival at the May meetings at the directors' able reflects very accurately the progress of . T. & T.'s fortunes:

1923.—Hernand Behn, Sosthenes Behn, George H. Gardiner, Henry B. Orde.

1924.—F. Wilder Bellamy, Edward J. Berwind, John W. Cutler, Allen G. Hoyt, John L. Merrill, Charles E. Mitchell, Walter E. Ogilvie, Bradley W. Palmer

1925.—Marqués de Urquijo

1926.—Arthur M. Anderson, Conde de Guell, Russell C. Leffingwell, George E. Pingree; Wolcott H. Pitkin

1927.—R. Fulton Cutting, Lansing P. Reed, Logan N. Rock

1928.—Clarence H. Mackay

In May, 1923, when I. T. & T. published s second report (for 1922), its directorate ncluded only two men, besides the Behns hemselves, who are now to be found at the ng table. Mr. Orde and Mr. Gardiner were estined to become the leaders of the two roups—the management group and the adisory group—which are to be found in most irectorates. Henry B. Orde was a stocky, hick-haired, Canada-trained banker when e first entered the American Colonial Bank n Porto Rico. He met the Behns, liked them, ecame one of the first converts to their telehone plans, and in 1916 found himself diector and treasurer of Behn Bros., Inc. In 920, Behn Bros., Inc.'s function was comlete and when I. T. & T. was born, Mr. Orde assisted at the delivery. Today, he ranks ext to the Behns in I. T. & T. management, s a close-mouthed, open-faced, vigorous man of fifty-five, completely absorbed in the company's affairs. George H. Gardiner, by way of contrast, is absorbed in many another enterprise, being the fourth man in the law firm headed by John W. Davis, and a great comfort to that firm's most profitable client, the House of Morgan. Nonetheless, Mr. Gardiner drew the original papers of incorporation for the brothers and mailed them to the Secretary of State of Maryland, and his name has always been printed twice among the directors, once in its proper alphabetical position, and once at the end of the list, as "General Counsel." The title is more general than specific. I. T. & T. has many legal advisers and a law department of the first rank. But while Mr. Gardiner would not now draw up articles of incorporation, he remains the company's guide, philosopher, and friend, and despite the glittering figures which later took their seats at the table, perhaps the most indispensable I. T. & T. director today.

When Mr. Orde and Mr. Gardiner came to the meeting of May, 1924, they found eight new faces at the table. The year 1923 had, in fact, marked the most significant step yet undertaken by the Behns—the entrance into the New York credit market. To the board, then, there came Charles E. Mitchell and Allen Grey Hoyt of the National City. The Mitchell history is well-known. Hoyt's career had closely paralleled that of Frank A. Vanderlip—each was born in Aurora, Illinois; each began his work in Washington; they came to the City within a few months of each other, and they worked together to develop the bank's young bond department. It was Hoyt who convinced Mitchell that in spite of a disturbed market, the City should finance the Behns' projects in Cuba and Porto Rico.

Together with the City's representatives there appeared, of course, the comparative youngsters who had ventured to underwrite the issue of I. T. & T. common in April, 1923. John W. Cutler and F. Wilder Bellamy left Harvard and Yale in 1909, two tall, slim, polite, and eager young men. Cutler had been a famous Harvard athlete, stroke of the crew in his first year, and in his fourth, All-American quarterback under Percy Haughton. Afterwards he became a Boston (Lee, Higginson) banker, a distinguished ordnance officer in France, and a talented amateur artist. Not until the War ended did he join E. B. Smith & Co., where he opened a successful career with the I. T. & T. deal. His latest honorary office is the presidency of the Hangar Club, an ultra-smart, ultra-rich group of aviators and friends of aviators, including Colonel Behn, H. P. Davison, Marshall Field, W. A. Harriman, Gordon S. Rentschler, and others. Bellamy was first a lawyer (O'Brien, Boardman, Parker & Fox), then a banker. He was the Dominick & Dominick partner assigned to I. T. & T.'s affairs. Like Cutler, he has kept his slimness, his distinction, and his love of sport.

Also in this crucial year, to the board table came that grand old man, Edward Julius Berwind, whose chairmanship of the Berwind-White Coal Mining Co. heads an almost endless list of distinctions, who adores the husband of his niece, Mrs. Sosthenes Behn, and who, at eighty-two, is the best-loved of all who sit, noon after noon, at the cheerful tables of the Recess Club. And in this year, Bradley Webster Palmer, Harvard '88, fisherman, bachelor, chairman of United Fruit's executive committee. And Walter Ellsworth Ogilvie, a potent railroader in Cuba, yachtsman in America and England, Republican and Baptist. And John L. Merrill, who began his career as a $5.00-a-week errand boy in the two-room office of that daring enterprise which had drawn 5,000 miles of cable from Texas to Peru; who finds himself, in 1930, president of All-America Cables with 30,000 miles of underwater cable and handling 7,000 messages a day; whose record of service now covers close to half a century.

The year 1924 saw the signing of the Spanish contract; when May, 1925, arrived, a great grandee had joined the group about the Behns. Don Estanislao de Urquijo y Ussia, Marqués de Urquijo, is perhaps the richest man in Spain, is certainly that nation's foremost banker and financier. Interminable are his names, his orders, and his children. The proudest and most embarrassing moment of his life (and in the life of his lovely Donna Maria) arrived when his heir turned out to be twins. But in time, the meticulous Marqués was satisfied that Don Juan had preceded Don Luis by some moments, and in the due course of events, Don Juan came to America to prepare himself for his great financial responsibilities. The Marqués, who bears the title of president of the Compañía Telefónica Nacional de España, is of course not the operating chief. His Banco Urquijo, however, led the list of Madrid underwriters of the company's preferred stock.

With the Marqués de Urquijo had been elected the Marqués de Comillac. This almost equally rich and illustrious grandee died, however, within a few months of his election and was succeeded, at the 1926 meeting, by his nephew, the Conde de Guell.

[*Continued on page 124*]

Armored Cars

Mr. Ammunition Wheed unwittingly inspired them. Bullets would glance off their walls and their windows. But no bandit ever attacks them. Not even when they move the Federal Reserve and take $4,000,000,000 from vault to vault. They shoot too fast. They are too tough.

IN 1859 a man named Brink came out to Chicago from Vermont. There were then only 95,000 people in Chicago, but it was nevertheless a great center of traffic and many were the trunks and suitcases moving through its streets. So Mr. Brink bought a horse and wagon and made a living through the collection and delivery of parcels, baggage, and merchandise. He had an office on Randolph Street and a crew of trunk-carriers who added to their fame and their incomes by wagering on their ability to lift loaded beer wagons. Mr. Brink apparently did not begin his business with any intention of specializing on the transfer of money, but after he got a job moving six bags of silver dollars, each weighing sixty-one pounds, from the Home National Bank at Halsted and Washington streets to the Federal Building, he realized that money-moving might be a business in itself. Not that there were any bandits in Chicago at that time, but paper money was none too stable and everyone had a strong preference for gold and silver—a preference which made money transfer a matter of heavy moving. So in 1891 Mr. Brink began moving bank funds and pay roll money (his first pay roll customer was Western Electric). Today, operating in nearly 600 cities, Brink's Express covers its transportations with insurance amounting to more than $1,000,000,000.

But though Brink's is still the largest money-transporter, it has today its parallels in many American cities. In New York there are the United States Trucking Corp., the Armored Service Corporation, and Brink's New York branch, and certainly few occupants of the financial district have missed seeing their steel-plated, tank-like treasure cars manned by crews with automatics in their hands and machine guns at their feet. The usual reaction to their presence is the reflection that things have come to a pretty pass when a man has to hire a traveling fort to carry his money in, but although the situation which produced them is no doubt deplorable, their solution of the problem has been unqualifiedly a success. It is only the cinema bandit who attacks armored money-transports; and though United States Trucking alone moves some $20,000,000 a day from the Federal Reserve to New York banks, the operation has never included the firing of a single shot. Society has been frequently reproached with its inability to guard the lives of its members. Severe, too, is the indictment of the tribute paid by industry to racketeers and gangsters. But society (through its money-transport agencies) can come very close to guaranteeing that a shipment of money will reach its proper destination without being molested on the way. You can take a man's life from a distance. But you have to take his money in your hand. And such a capture has at least approached the impossible.

UNITED STATES TRUCKIN
ARMORED CAR DEP

GUNS THAT ARE ALWAYS DRAWN MAY NEVER NEED TO BE FIRED

Daily from the Federal Reserve to Chase National, to National City, to many another Manhattan bank, travel small fortunes in small forts. This money, attractive to the bandit eye, is never molested.

It was, as might be expected, the Brink's people who began the development of the money car into the armored car. And—astonishingly enough—it is entirely within the last thirteen years that this development has been recorded. Until 1917 (which was twenty-six years after the Brink's Express had concentrated on money-moving), funds in transit were carried in an ordinary automobile with an armed but not very apprehensive guard. For the bandit of those days belonged not to the Capone tradition but to the Jesse James tradition, was associated chiefly with the gold fields of California and Montana, and usually carried on his professional duties by hiding behind a rock and taking pot shots at the admirable target furnished by Wells-Fargo express guards perched on the tops of stagecoaches. In August, 1917, however, banditry came to Chicago in the person of one Ammunition Wheed, who shot two Brink's men (in the back) and got away with a pay roll. Mr. Wheed was promptly caught and later executed, but the Brink's company, alarmed, took the precaution of trailing their money cars with another machine carrying a rifle squad. Then, in 1928, in the suburbs of Pittsburgh, a Brink's car was dynamited, and the trailer car ran into the hole made by the explosion. After this further demonstration of the fact that crime was moving from the open spaces to the big cities, the Brink's men realized that stringent measures had become necessary. And so effectively were such measures taken that since the 1928 episode no highwaymen have had the slightest success (and few the slightest interest) in the cars of Brink's Express or of any other accredited money-transport.

The modern armored car is, for all practical purposes, impregnable. No bullet can penetrate its steel sides, and bullet-proof, too, are its windows. It is manned by a crew of from three to eight men, armed with automatics, riot guns, and machine guns, and chosen with a particular emphasis upon their ability to shoot from the hip. Among the more recent additions to its equipment are tear-gas guns as well as ventilators to scatter the fumes of any gas attack attempted by a scientific highwayman. Except for the absence of caterpillar wheels, the armored car is essentially a tank. And the safest commodity in the world to transport is money.

It is true that the actual delivery cannot be quite so well covered, since at the point of destination the treasure guardians have to leave their fort and come out in the open. But even here the protection is convincingly adequate. The man carrying the money is followed and preceded by men with guns not in their holsters but in their hands. In the most important jobs (i.e., those involving the largest amounts), shipment is not by individual cars but by fleets. When Armored Service moved between $60,000,000 and $70,000,000 from an old Brooklyn bank building to the new, it used fleets of four cars with one carrying the money and the three others guarding the carrier. The Brink's people precede their more momentous Chicago jobs by making a careful study and detailed map of the district, station sharpshooters in upper stories and riflemen at corners, close the streets with barricades of armored cars, and keep a roving machine gun nest constantly on patrol. There are occasions in which the money transported is of so great an amount that one might expect even a bandit to take a risk in attempting to secure it. Yet United States Trucking's removal of $4,000,000,000 from the Federal Reserve's Equitable Building vaults to its present location at 44 Maiden Lane was accomplished with no untoward incident.

There remains, however, the possibility of theft through corruption rather than through force. Given a crew of $40 a week custodians, and a cargo which may easily run to between $3,000,000 and $5,000,000, and it would appear that the armored-car driver might not always deliver his shipment to the proper destination. But precautions against attack from within are as careful and as effective as precautions against attack from without. There is, of course, a complete bonding and insurance system which protects both the carrier and owner from loss, but thus far there is no record of an insurance company having to make good on a stolen shipment. Guards and drivers are chosen with utmost care. An applicant for service with Armored Service must be able to account for his life in full for ten years back. And bonding company detectives must agree with his report. He must be twenty-five years old (and ordinarily not more than forty-five), and a War record is a major asset. United States Trucking has a Russian ex-general and seventeen former U. S. Army captains. If he moves, he must supply his new address within twenty-four hours or be discharged, and he must not object to having his whereabouts frequently checked up by means of night telephone calls to his residence. If he works for United States Trucking, he must turn in his .45 Colt every evening, but if he works for Armored Service he can take his .38 Colt home. The Trucking people think it unfair to the populace to permit the free circulation of some 400 guns, whereas the Armored Service people argue that it is even more dangerous to leave a small arsenal in one building. The pay is not particularly high. An Armored Service man starts at $5.00 a day, rises to $40 a week. He has a five-day week, but he also has a ten or ten and one-half hour day. He gets prizes for avoiding delays and accidents and credits for performing good deeds (one Armored crew met an automobile full of suspicious-looking characters, asked to see their auto license, found they had none, followed them until they reached a policeman, who made a further investigation, and discovered that they were notorious criminals). When an Armored man accumulates 100 credits, he gets a raise in pay. He may also become a corporal or even a sergeant, but there are only seven sergeants. He must take target practice every week (Armored's instructor is a former West Pointer), but the chances of actually having to use his weapon are remote. On the whole, he is a simple, honest, reliable individual, pleased with his uniform, proud of his responsibility, and somewhat in the enviable position of a fireman who never has any fires. And he is emphatically not a criminal type.

Furthermore, his daily routine is carefully organized and closely superintended. He never knows who will be fellow members of his crew until he is ready to start out, as crews are drawn by cards each day and the personnel thus thoroughly shuffled. Routes are made out each day for the following day by an officer of the company, and the driver is given an assortment of blue slips for pick-ups and yellow slips for deliveries. He goes to his first pick-up (for instance, a bank), gets the money, receipts for it (adequate precautions are taken in the matter of signatures), notes the time on his pick-up slip, and consults slip No. 2 to see where he is going next. A complete log of the trip is kept by the custodian and signed by every man on the car. Among the slips are envelopes, each containing a nickel. When the custodian comes to an envelope, he calls up his home office and receives instructions concerning his next

[*Continued on page 132*]

THE CITY OF NEW YORK
DEPARTMENT OF
PLANT & STRUCTURES

© *Keystone*

GOOD SHOTS AND BAD TARGETS

The bandit who prefers to shoot from ambush at unsuspecting victims sees no point in attacking steel-plated, loop-holed tanks. In addition to automatics, the guards are also equipped with riot guns, machine guns, and tear-gas guns.

© *Keystone*

HOLDING THE FORT

The ability to shoot rapidly and accurately is an essential qualification for the position of treasure guard. United States Trucking has among its custodians a former general in the Russian Army and seventeen former captains, U. S. A.

Looking into a City: Pittsburgh

Built on Tonnage and pointed toward Technology. The place where Andrew Mellon would choose to live the next seventy-five years. Lost: a crown of coal. Rediscovered: Westinghouse.

PITTSBURGH is a subject that can properly be approached only with humility. Its close-hanging hills are impervious to satire. The most brilliant aphorism will drop sparkless into its blast furnaces. Generalizations will fade into its smoke, which, generalizations to the contrary, is not unhealthy. Pittsburgh is a colossus of fact.

There is the fact of the fox. Out of a wood, down a November hillside, it runs for dear life, America's finest hounds four yards behind. And presently thirty pink-coated gentlemen come over a fence on horseback. Early Monday morning, earlier than New Yorkers, each and every gentleman will be at his desk near the confluence of the Allegheny and the Monongahela.

There is the fact of Barcowski, a harmless individual who was brutally beaten to death with a poker stick wielded by drunken Coal and Iron Police.

There is the fact of 97,000 school children who gave a dime each to the Cathedral of Learning. And a mill-worker who offered it $5,000. And a Magyar woman who gave it the price of a month's meat.

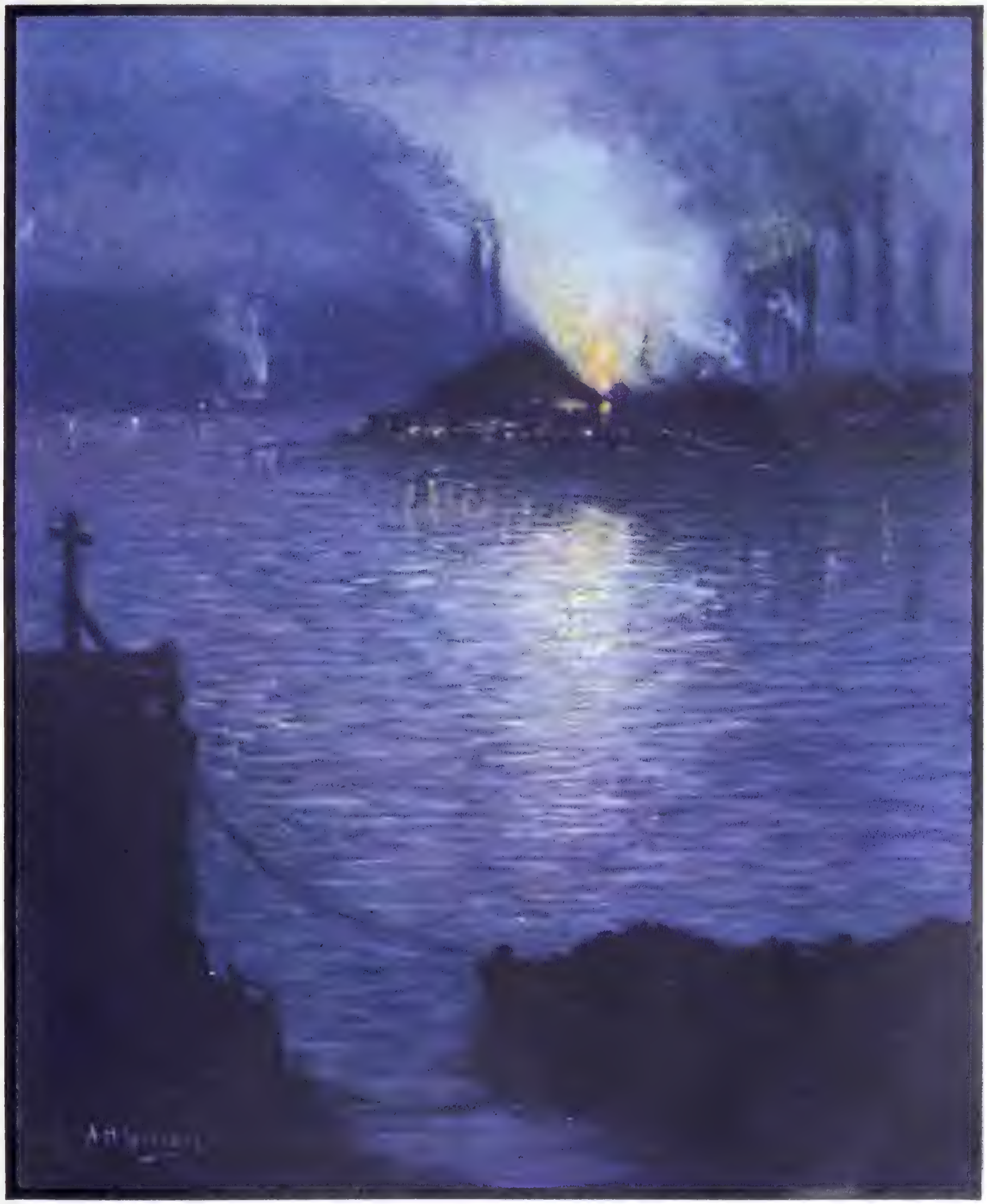
This last fact we will elaborate.

Some thirty years ago a rising realtor named Nicola, who is gentle, deaf, and grows a neat gray mustache, bought several hundred cheap acres in the Schenley district, exactly midway between the great residences and the great offices of Pittsburgh. In this district, Andrew Carnegie erected an art institute, a technology school, the biggest of his libraries. He then removed himself and died. Then a fierce old man named Frick, who was both partner and enemy of Carnegie, bought from the said Nicola fourteen acres of the Schenley land. No one knows why. Some say he intended to build the most conspicuous house in Pittsburgh. But, in any case, he happened to leave town and die. Then a man named Bowman, mild-mannered and wearing *pince-nez*, walked through Schenley acres, dreaming. Unfortunately for his peace of mind he was chancellor of the University of Pittsburgh, a huge institution which had little money and immense opportunity. In Schenley acres he found inspiration. He would stir the imaginations of all Pittsburgh, he would dramatize education, he would build a skyscraper university. But since he wanted not just a skyscraper, he wrestled with architects from many a dusk to many a dawn. When his plans were on paper, he walked out into the city for money. Pittsburgh broke down emotionally and offered him its dimes and dollars in a unanimous flood. Industries gave

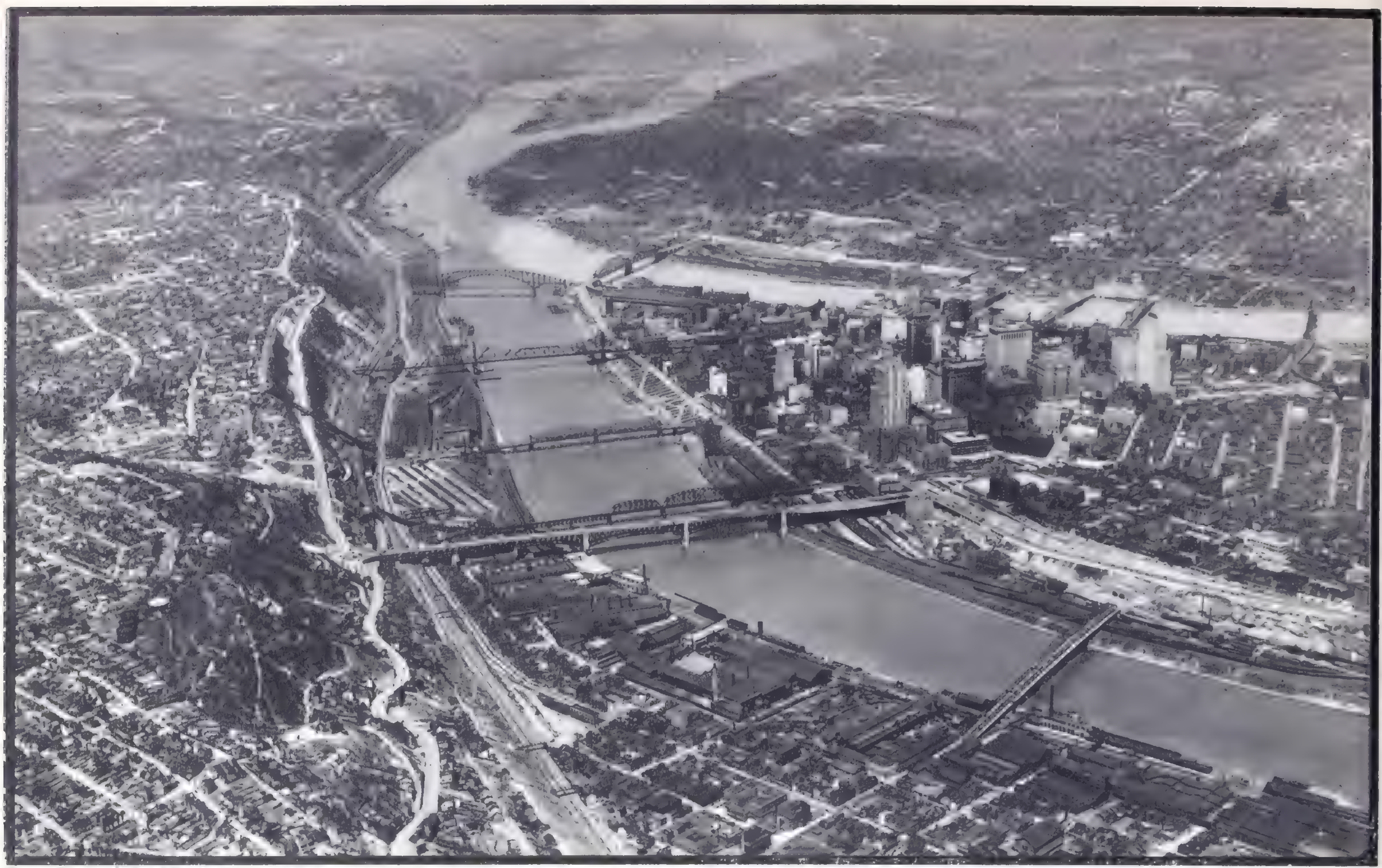
Photos Pittsburgh Aerial Survey

IN LOVELY SEWICKLEY HEIGHTS—PITTSBURGH'S "TUXEDO"

The great estates are located fifteen miles from the throbbing Golden Triangle. Above, the annual Sewickley horse show, where fashion gathers. To the right, a typical garden estate—that of W. C. McKinney, secretary-treasurer and director of Standard Sanitary. His factory is several miles up the Monongahela (see map). Representative of Pittsburgh's passion for cleanliness, Standard Sanitary makes bath tubs, vitreous china fixtures, dish-washing and clothes-washing machines. Last year it merged with vast American Radiator Co., the combination being largest enameler and vitreous china producer in the world, with 1929 gross sales of $182,000,000; net profit, $20,000,000.



THE TITANIC PLANT OF WESTINGHOUSE ELECTRIC IN EAST PITTSBURGH WHERE $10,000,000 A YEAR ARE SPENT IN RESEARCH. THIS IS PITTSBURGH'S PIONEER, HAVING GIVEN THE WORLD THE ALTERNATING ELECTRICAL CURRENT AND THE INTERNATIONALLY-KNOWN KDKA BROADCASTING STATION. IT IS BECAUSE OF WESTINGHOUSE THAT PITTSBURGH IS ONE OF THE NATION'S MOST ARDENT RADIO FANS



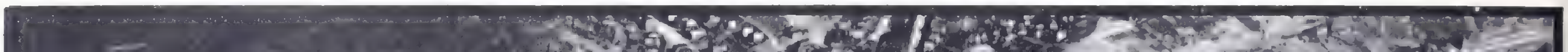
Photos Pittsburgh Aerial Survey

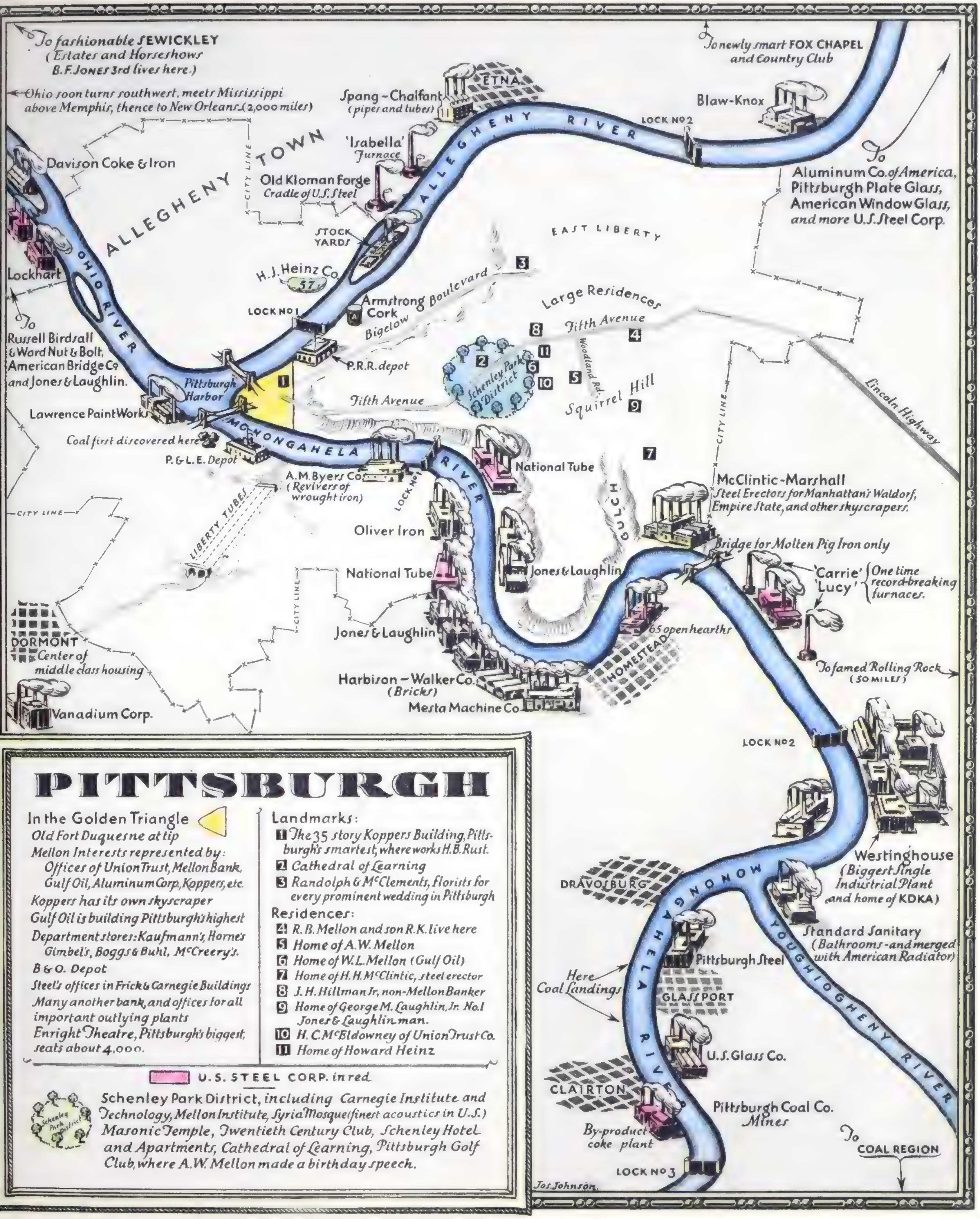
ABOVE: THE GOLDEN TRIANGLE

Cradle of the West, where Rivers Allegheny (in background) and Monongahela (in foreground) join to form the continent-piercing Ohio River. Here the French held Fort Duquesne. Here the continent was finally conquered for the Anglo-Saxon race. Here Washington learned the military tactics that defeated Cornwallis.

BELOW: A SWEATY RIVER

Section of the Monongahela, showing one of the many plants of Pittsburgh's aristocratic independent, Jones & Laughlin, a few miles above the Golden Triangle. The numberless chimneys along this river look like a forest, and behind them the laborers' houses perch on the hills.




To fashionable SEWICKLEY (Estates and Horseshows B.F. JONES 3rd lives here.)
Ohio soon turns southwest, meets Mississippi above Memphis, thence to New Orleans (2,000 miles)
To newly smart FOX CHAPEL and Country Club
ETNA
Spang-Chalfant (pipes and tubes)
Blaw-Knox
ALLEGHENY RIVER
LOCK No 2
'Isabella' Furnace
TOWN
ALLEGHENY
CITY LINE
Davison Coke & Iron
Old Kloman Forge Cradle of U.S. Steel
To Aluminum Co. of America, Pittsburgh Plate Glass, American Window Glass, and more U.S. Steel Corp.
STOCK YARDS
EAST LIBERTY
OHIO RIVER
Lockhart
H.J. Heinz Co.
57
3
Bigelow Boulevard
Armstrong Cork
LOCK No 1
Large Residences
Fifth Avenue
To Russell Birdsall & Ward Nut & Bolt, American Bridge Co and Jones & Laughlin.
8
4
11
2
6
5
10
Schenley Park District
Woodland Rd.
P.R.R. depot
1
Pittsburgh Harbor
Fifth Avenue
Squirrel Hill
9
Lincoln Highway
Lawrence Paint Works
MONONGAHELA RIVER
Coal first discovered here
P. & L.E. Depot
A.M. Byers Co. (Revivers of wrought iron)
LOCK No 1
National Tube
7
McClintic-Marshall Steel Erectors for Manhattan's Waldorf, Empire State, and other skyscrapers.
LIBERTY TUBES
GULCH
Oliver Iron
Bridge for Molten Pig Iron only
National Tube
Jones & Laughlin
'Carrie' 'Lucy' One time record-breaking furnaces.
Jones & Laughlin
65 open hearths
DORMONT Center of middle class housing
HOMESTEAD
To famed Rolling Rock (50 MILES)
Harbison-Walker Co. (Bricks)
Mesta Machine Co.
Vanadium Corp.
LOCK No 2
Westinghouse (Biggest Single Industrial Plant and home of KDKA)
DRAVOSBURG
MONONGAHELA RIVER
Standard Sanitary (Bathrooms - and merged with American Radiator)
Pittsburgh Steel
YOUGHIOGHENY RIVER
Here Coal Landings
GLASSPORT
U.S. Glass Co.
CLAIRTON
Pittsburgh Coal Co. Mines
By-product coke plant
To COAL REGION
LOCK No 3
Jos. Johnson.

PITTSBURGH

In the Golden Triangle ◁

Old Fort Duquesne at tip

Mellon Interests represented by:
Offices of Union Trust, Mellon Bank, Gulf Oil, Aluminum Corp, Koppers, etc.

Koppers has its own skyscraper

Gulf Oil is building Pittsburgh's highest

Department stores: Kaufmann's, Horne's Gimbel's, Boggs & Buhl, McCreery's.

B & O. Depot

Steel's offices in Frick & Carnegie Buildings

Many another bank, and offices for all important outlying plants

Enright Theatre, Pittsburgh's biggest, seats about 4,000.

Landmarks:

- **1** *The 35 story Koppers Building, Pittsburgh's smartest, where works H.B. Rust.*
- **2** *Cathedral of Learning*
- **3** *Randolph & McClements, Florists for every prominent wedding in Pittsburgh*

Residences:

- **4** *R.B. Mellon and son R.K. live here*
- **5** *Home of A.W. Mellon*
- **6** *Home of W.L. Mellon (Gulf Oil)*
- **7** *Home of H.H. McClintic, steel erector*
- **8** *J.H. Hillman Jr, non-Mellon Banker*
- **9** *Home of George M. Laughlin, Jr. No. 1 Jones & Laughlin man.*
- **10** *H.C. McEldowney of Union Trust Co.*
- **11** *Home of Howard Heinz*

🟥 U.S. STEEL CORP. *in red*

Schenley Park District, *including Carnegie Institute and Technology, Mellon Institute, Syria Mosque (finest acoustics in U.S.) Masonic Temple, Twentieth Century Club, Schenley Hotel and Apartments, Cathedral of Learning, Pittsburgh Golf Club, where A.W. Mellon made a birthday speech.*

Publishers Photo Service

(Westinghouse and Heinz estate, $300,000 each; U. S. Steel and Gulf Refining, $250,000 each), tycoons, managers, school children, Magyars, Slovaks, miners.

Even so, this great Salesman-Educator Bowman had no land for his Cathedral, and he had no Rockefeller to add his millions to the people's thousands. But one day it was obscurely announced that those fourteen conspicuous acres that Frick had chosen, now valued from $4,000,000 to $5,000,000, had been acquired from his estate for the Cathedral of Learning. Those who really knew their Pittsburgh nodded wise heads. The donors were, of course, the Mellons.

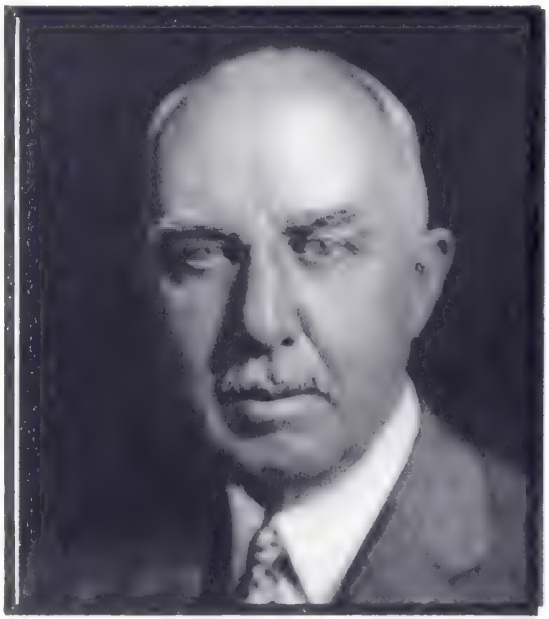
The facts in that story, which are so obvious to Pittsburghers and which might be missed by outsiders and which are absolutely fundamental, are two: (1) the brass-knuckled steel barons of the 19th century have left town; (2) the Mellons remain.

Every Washington correspondent who has ever interviewed the Secretary of the Treasury knows that his most apparent characteristic is gentleness. Everyone who knows Richard B. Mellon, venerable chief executive of the Mellon empire, knows that he is a gentle man. Neither A. W. nor R. B. likes rough-and-tumble. The same is true of their associates—you find at the head of the great Mellon companies mild men—often, like the Mellons, slight of stature. There are exceptions. But dynamic, magnetic, brilliant are adjectives that can rarely be applied to the administrators of the Mellon Raj.

And this leads us, unwillingly, to a generalization. Pittsburgh is a gentle city.

FOR THE NEXT SEVENTY-FIVE YEARS

. . . here, in the Schenley district, the destiny of the new Pittsburgh, the technological city, will be evolved. The emerging Gothic spire is the new Cathedral of Learning, built by all classes of citizens to house the University of Pittsburgh. Around it are the buildings of Carnegie Tech. Near it will be the Grecian temple of the Mellon Institute.



Blank & Stoller

RICHARD B. MELLON

. . . who, at seventy-two, is chief executive of Mellon interests. In his youth he found himself at Bismarck, North Dakota, then the end of the railroad line. Promptly he founded Bismarck's first bank, which still flourishes. But since then he has found in Pittsburgh plenty of room for financial enterprise and new things of every sort.

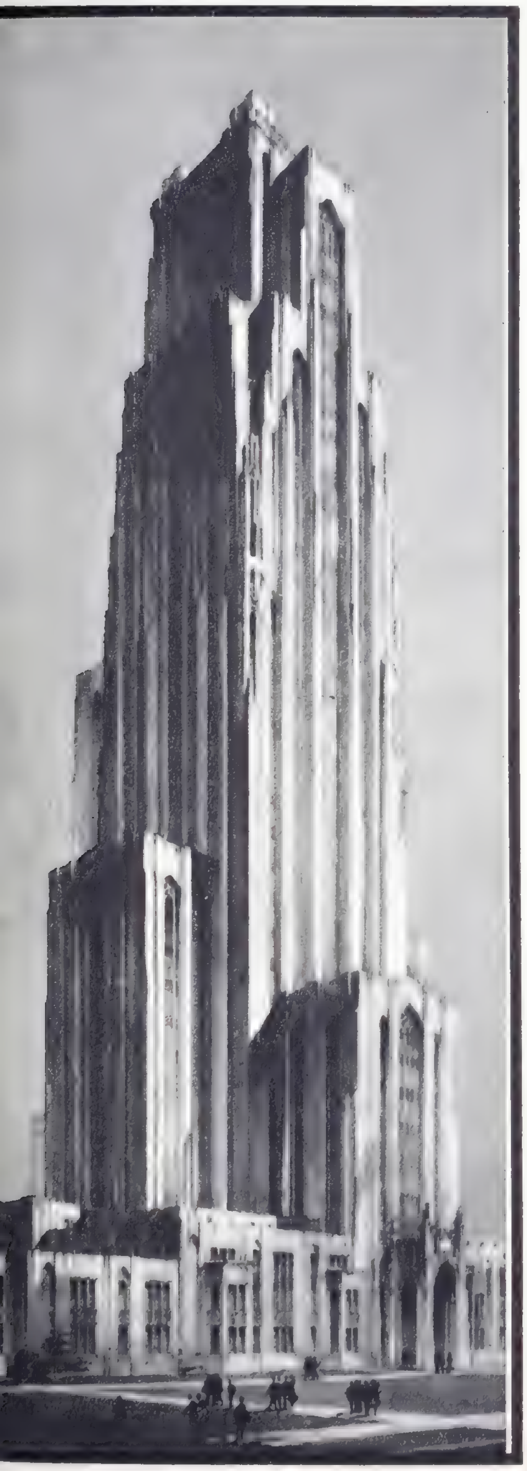
I.—The City Is Located

One morning in 1801 an American ship put into Leghorn, Italy, and presented her papers at the customhouse. The swarthy customs officer scratched his head, went to look for a map, finally returned to the ship's captain and had him arrested. "Son of a dog," he said, "your papers are forged. There is no such port as Pittsburgh."

But indeed there was. The ship's captain produced his own map of the U. S., pointed to the Gulf of Mexico, led the astonished Italian 1,000 miles up the Mississippi to the mouth of the Ohio, led him another 1,000 miles, past the tip of Illinois, past Evansville, Louisville, Cincinnati, to a place where the River Allegheny and the River Monongahela joined. At an apex of land pointing westward, the captain's finger stopped. "There, sir," he said, "is the port from which I cleared."

Over the destiny of this port, Nature must have brooded profoundly. She deposited iron, manganese, limestone near-by; she submerged forests and fish so that coal, oil, and gas could be had by an easy stretch of the industrial hand. She caused the port to lie in the only easy pass through the Allegheny, whether by land, water, or air. She placed it so that within 500 miles (a forty-eight-hour freight haul), 58 per cent of the modern Union lives and does business, and 47 per cent of all Canada. As a result, the people who came there to live now produce 40 per cent of the nation's bituminous coal, one-third of its by-product coke, a quarter of its

HANCELLOR BOWMAN: HIS CATHE-
RAL OF LEARNING IN SCHENLEY



steel, nearly half of its pipes: more iron, steel, glass, tin plate, air brakes, fire brick, white lead, preserved foods, cork, aluminum, railway signals, vanadium, and bituminous coal than any other city in the world. Pittsburgh's harbor clears 33,741,000 tons annually, surpassing the tonnage of either Suez or Panama. At this distributing point a local commission house grew into American Fruit Growers (Blue Goose), largest fruit and vegetable distributors in the world. And a gentleman respectfully referred to as R. B. toys with the theory that half the fortunes of America originated in this area.

Formerly one of the most beautiful sections of America, much of the Pittsburgh district has been sheared and shorn. It is spattered with semi-cities of frame and brick, tangled with railroads, punctured with factories. Smoke has killed the evergreens; the grass up the hillsides, where occasional laborers' houses are perched like mountain goats, is scrawny and barely green. The region smoulders; the rivers give it life. Covered wagons followed the rivers; the railroads have followed the wagons; the factories have dug themselves in between the railroads and the abrupt hills.

As in New York everything is high, in Pittsburgh everything is long. The Westinghouse plants are strung out along Turtle Creek a distance of nine miles; the U. S. Steel Corp., finding concentration hopeless, has its coke plant, blast furnaces, rolling mills, tube, wire, wheel, and bridge plants scattered up and down four rivers and at strategic points in the immediate provinces. Jones & Laughlin, Pittsburgh's proudest independent steelmaker, has one huge plant almost at the doors of the financial district, another at its own model town of Aliquippa, half an hour's train ride down the Ohio River. There is no human plan in the skein of chimneys, interconnecting railways, tunnels, and boulevards; there is no plan at all, except that which Nature laid down when she coursed the rivers.

II.—The Human Pattern

The rivers join. On the apex of land so formed rise the spires of a financial district that controls $1,250,000,000 of industrial investment, in the buildings called Grant, Koppers, Oliver, Carnegie, Frick. Around it, across both rivers and up the slopes behind, spreads a city of 670,000; around this a solid metropolitan area, including four cities and 122 municipalities, all of which, barring political accidents, will presently emerge as the fifth city of the land with a population of 1,400,000.

Up and down its sweaty rivers, Pittsburgh carries on such a tangle of industries that in describing them one Pittsburgh directory has divided them into 5,804 *classes.* But everything has to do with something else. The coke ovens are linked to the open hearths, the blast furnaces to the coke ovens. Because furnaces are lined with brick, here is Harbison-Walker, one of the largest refractories in the world. With one hand, Westinghouse

H. B. RUST: HIS KOPPERS CATHEDRAL IN THE GOLDEN TRIANGLE

Electric buys enough steel to ship 900 carloads of finished products a month; with the other, it electrifies the steel mills.

But, of course, it is only at the top of industrial pyramids that individuals become conscious of the intimate connection of all parts. Stating it in terms of people, for most of whom there is a precisely allotted task, the Pittsburgh area includes about 300,000 families, of whom perhaps 200,000 are supported by industrial rather than commercial employment. Of 200,000 industrial workers in 1928, the largest groups were:

Carnegie Steel	23,678
Westinghouse Electric	18,376
Jones & Laughlin	17,152
National Tube	10,187
Oliver Iron & Steel	10,057
Pennsylvania Railroad	5,413
Westinghouse Air Brake	4,635
Pittsburgh Coal	3,648
Duquesne Light	3,164
McKeesport Tin Plate	3,099
Union Switch & Signal	2,959
Allegheny Steel	2,738
Pressed Steel	2,603
H. J. Heinz	2,219
Pittsburgh Terminal Coal	2,217
West Penn Power	2,176
Spang-Chalfant Co.	1,670
U. S. Glass Co.	1,548

Joined together in a mysterious economic present, Pittsburghers have, more than most industrial populations, a patriarchal background. However new Pittsburgh may be today, it is possible to trace the original pattern from living evidence. There was once a town across the Allegheny River whose estates spread their lawns down to the river banks. It was called Allegheny Town, and now that the estates have disappeared and the town has been incorporated into Pittsburgh, the district still goes by the old name. Where the wide lawns used to be are warehouses, factories, messy shops, and slums. Yet a dozen families of great age and power live right in the center of it, because they came from there in the first place.

The most notable person living in old Allegheny Town is old David B. Oliver. He is the oldest living man in the world of steel. He is ninety-six. Not only before the birth of steel, but before the birth of the Carnegie Co., before even steel was manufactured in Pittsburgh, Mr. Oliver was an ironmaster. For fifty years he was prime mover of the board of education; for sixty years he lived with Mrs. Oliver, mother of presidents and vice presidents of Oliver Iron & Steel. His brother was the late Henry Oliver, who bought all the Messabi iron options for Carnegie; and his niece, Edith, is Mrs. Henry R. Rea, the richest widow in Pittsburgh. She owns more land on the Golden Triangle than even the Mellons own. Her $1,000 a day taxes to the city of Pittsburgh surpass anyone's municipal taxes, and the busy Oliver Building is hers.

Near David Oliver in disreputable Allegheny Town lives Mrs. Henry Chalfant, wife of the son of the founder of Spang-Chalfant, which is about as old and respectable as

[*Continued on page 135*]

DAVID B. OLIVER

Oldest steel and ironmaster alive, who uniquely antedates the "age of steel" by some forty years. He lives in Allegheny Town.

Courtesy Jones & Laughlin Steel Corp.

B. F. JONES III

Grandson of B. F. Jones, founder of Jones & Laughlin, who, as largest inheritor of Jones & Laughlin stock, exemplifies Pittsburgh inheritances.

P. & A.

GEORGE G. CRAWFORD

President of Jones & Laughlin and, uniquely among the executives of this family corporation, a former U. S. Steel man.

Courtesy Carnegie Steel Co.

I. LAMONT HUGHES

As president of the vast Carnegie Co., he typifies the captains of the U. S. Steel empire unified at 71 Broadway, New York.

Underwood & Underwood

JAMES A. FARRELL

The present president of U. S. Steel had, of course, a Pittsburgh training (with Oliver Iron & Steel) and visits Pittsburgh at least twice a year.

Keystone

ALBERT C. LEHMAN

President of Blaw-Knox Co., one of Pittsburgh's leading specialized independents, making $17,000,000 worth of steel for concrete construction, etc.

ing Galloway

I

blishers Photo Service

II

Publishers Photo Service

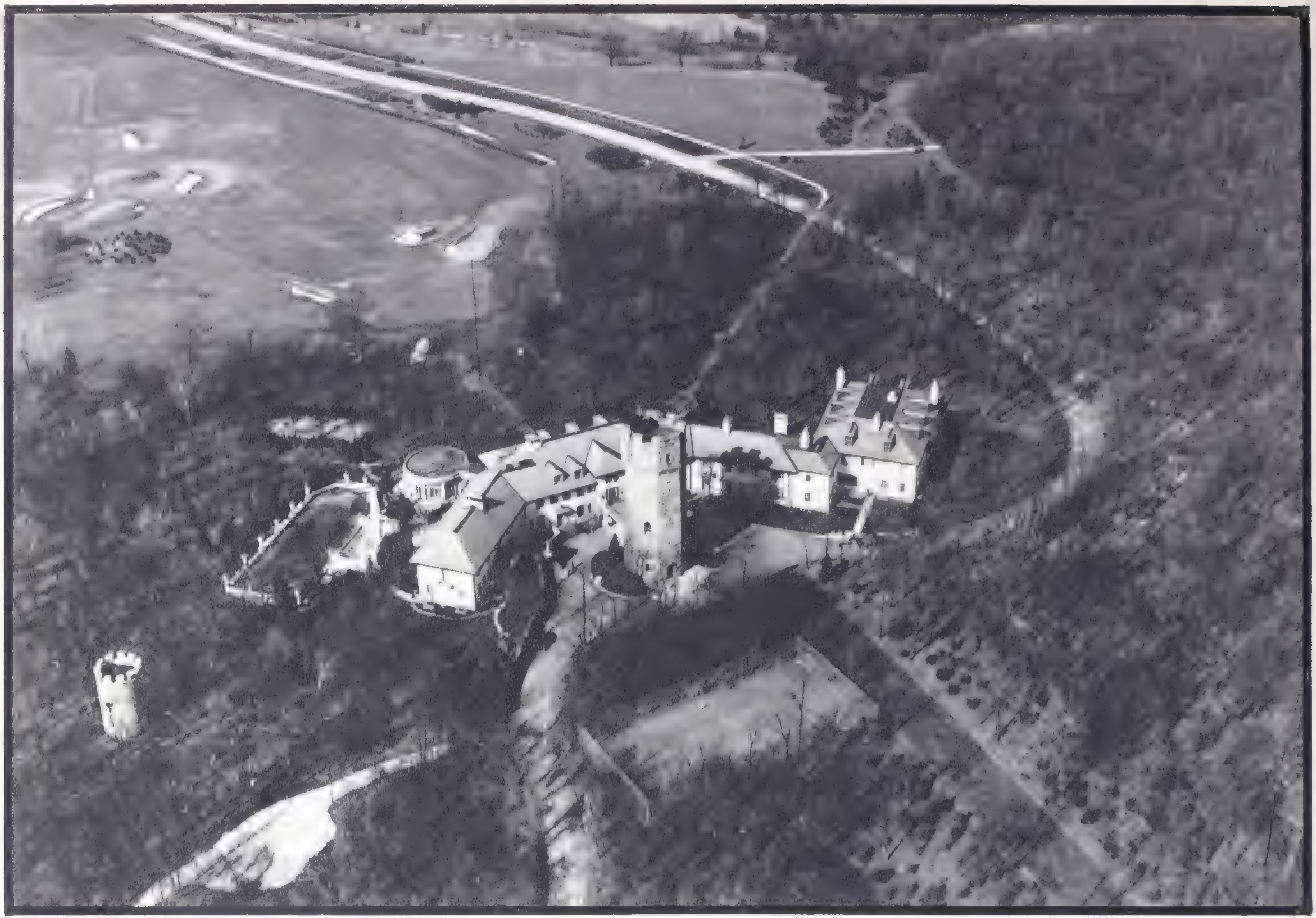
III

urtesy Jones & Laughlin Steel Corp.

IV

SCENES FROM THE CITY THAT MAKES ALWAYS PART OF SOMETHING ELSE

I.—Glow from the open hearths at night. Sometimes the steel sheds seem to be n fire. II.—Some prima donnas of the steel industry—pig iron blast furnaces of e Carnegie Co. III.—Pigmy man ladles his molten steel into ingot molds. After it solidifies, it will be rolled to shapes. IV.—B. F. Jones Jr. rediscovered the Pittsburgh rivers. This Jones & Laughlin outfit is headed down the Ohio 2,000 miles to the Gulf of Mexico. The total value of the tow is over $1,000,000.



Pittsburgh Aerial Survey

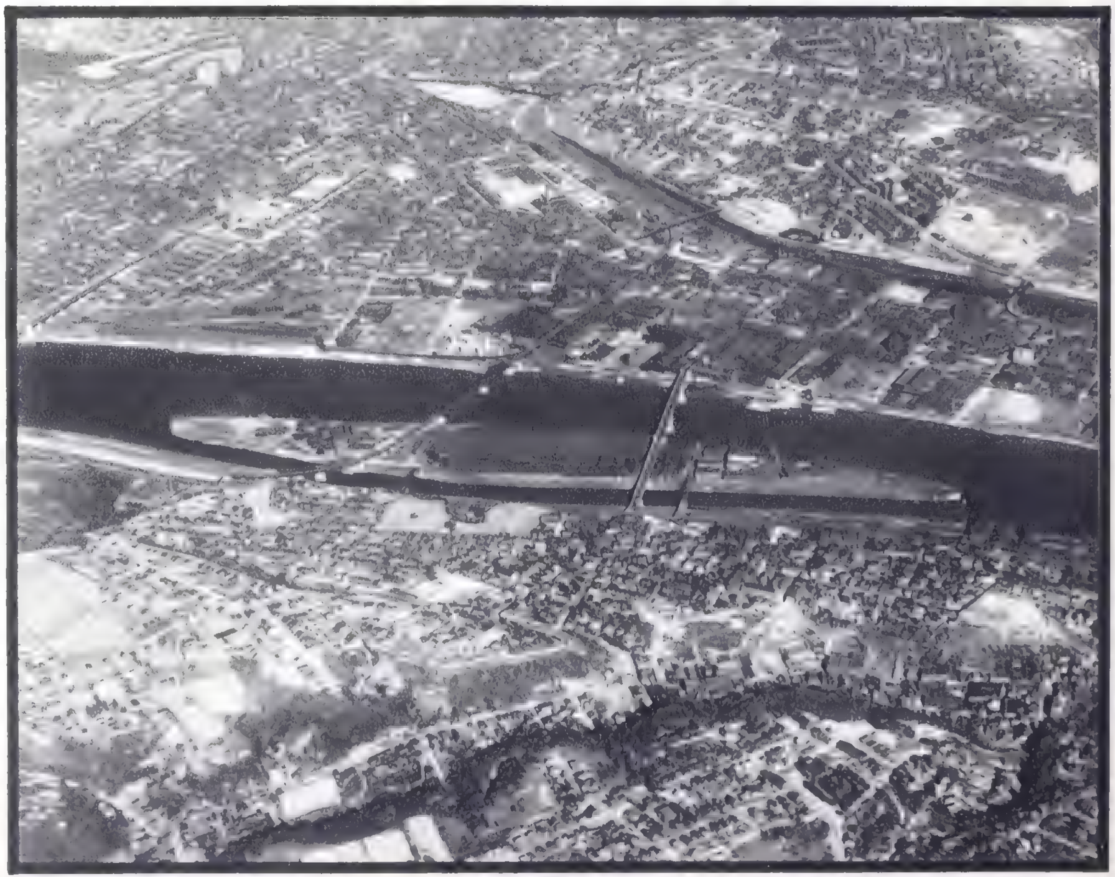
. I .

I.—"Rolling Rock," fifty miles from Pittsburgh, was formerly the Mellon estate, stocked with fish and game. Members of the family were in the habit of asking their friends out for the week-end, but their invitations were so frequent as to be embarrassing. R. B. therefore turned the estate over to a board of governors and converted it into a country club whose members hunt, fish, swim, play golf and tennis at their ease. Near-by are stabled some of America's finest horses and kenneled some of America's finest hounds.

II.—Not a battleship steaming up the Allegheny, but Herr's Island, on which are located stockyards, soapyards.

III.—This is Koppers Seaboard Coke Co.'s plant (foreground) at Kearny, New Jersey, in the New York harbor: a symbol of the extension of Pittsburgh's interests throughout the nation.

IV.—A lock on the Monongahela near one of McClintic-Marshall's plants. This is how Pittsburgh has been linked to tidewater and is one of the causes for the huge tonnage of the Pittsburgh harbor, exceeding Suez or Panama. Note the stern paddle wheel on the tug to the left.



Pittsburgh Aerial Survey

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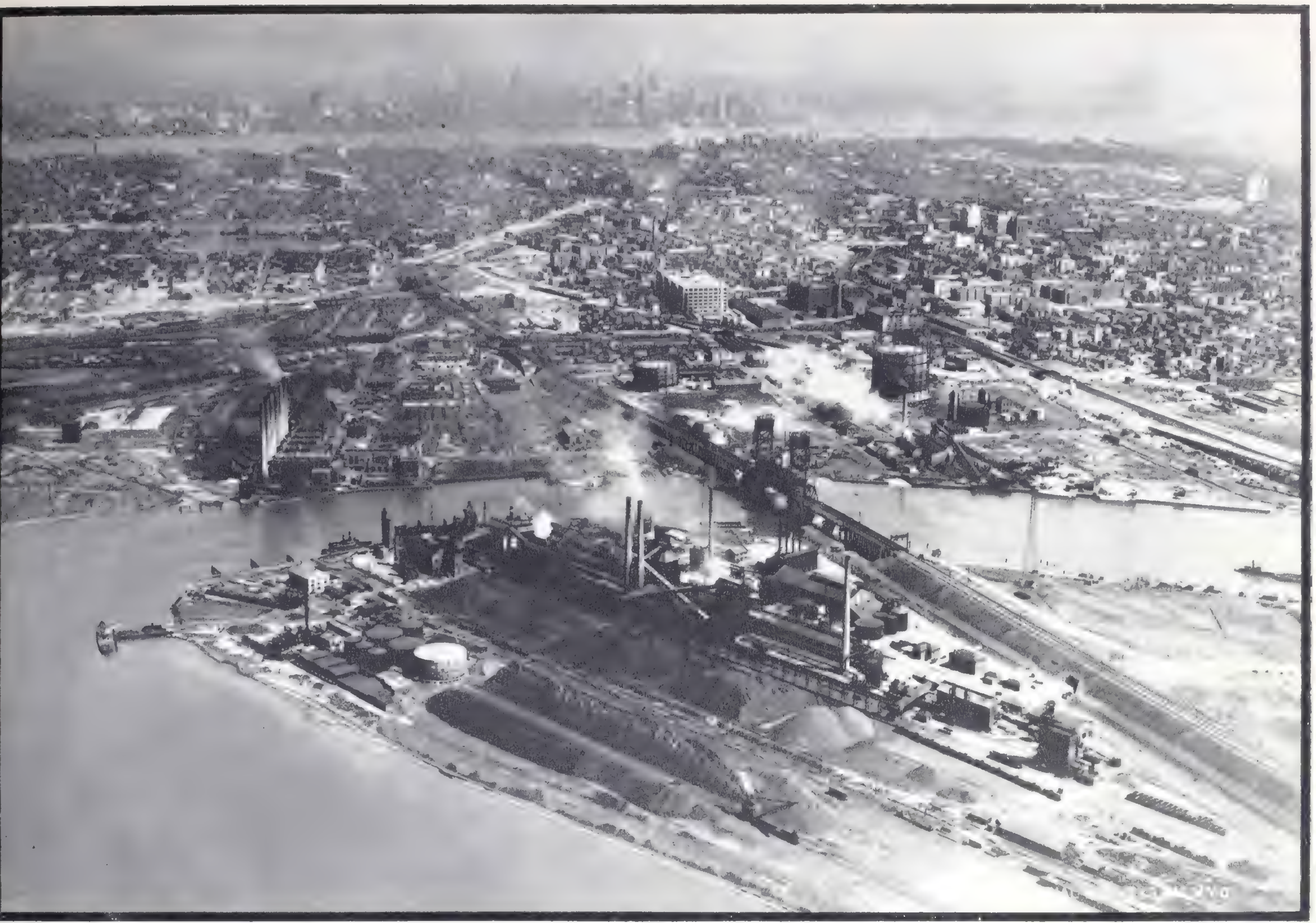
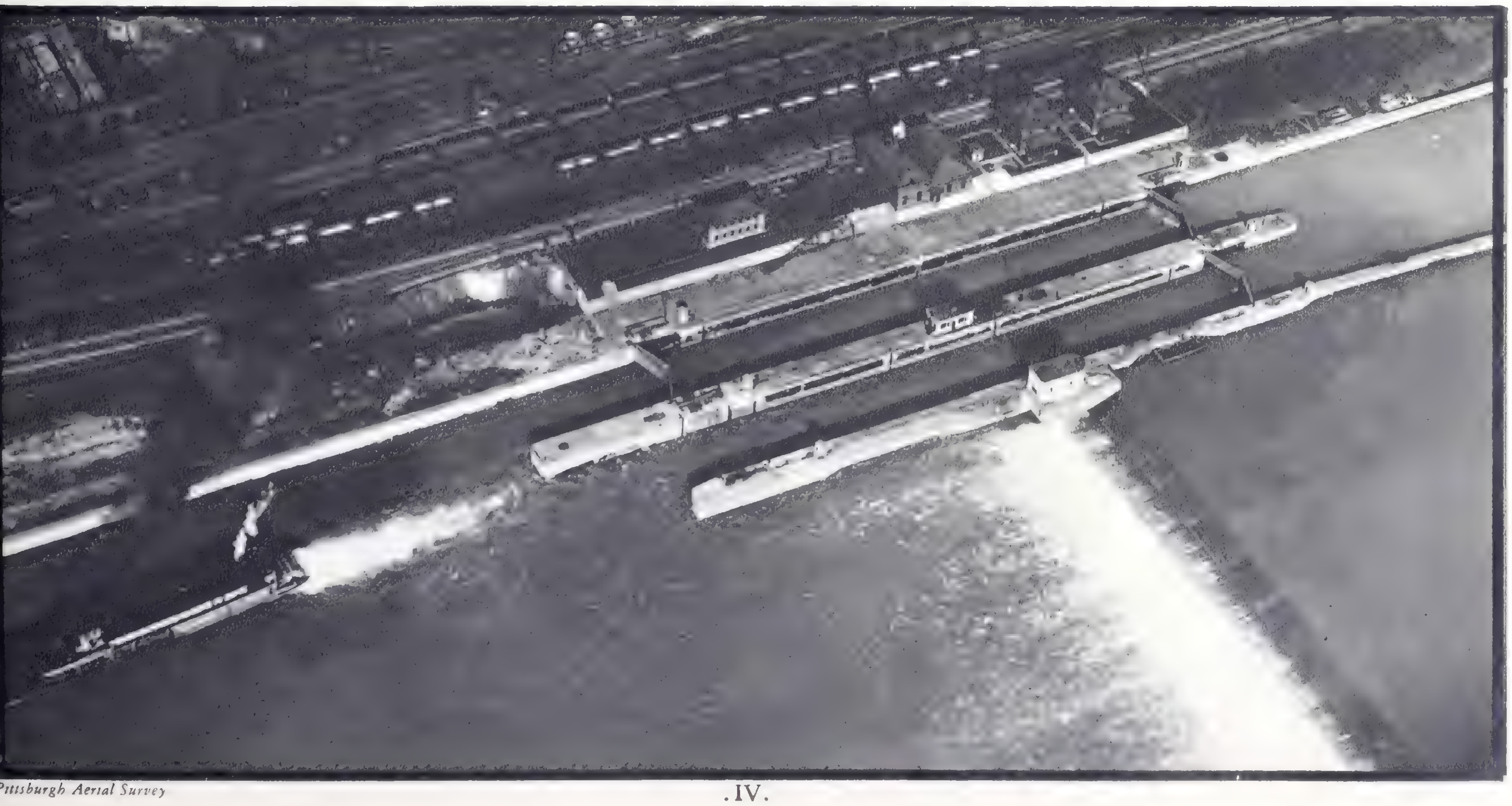


airchild Aerial Survey

.III.

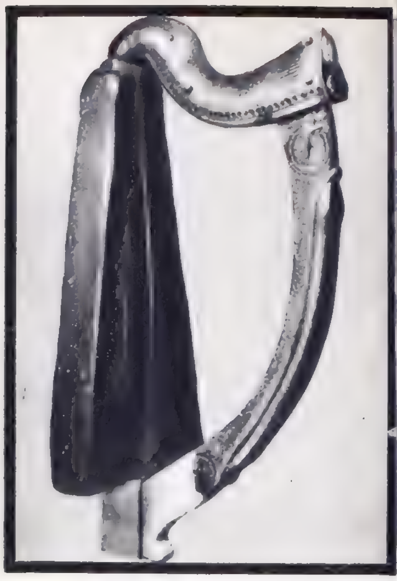


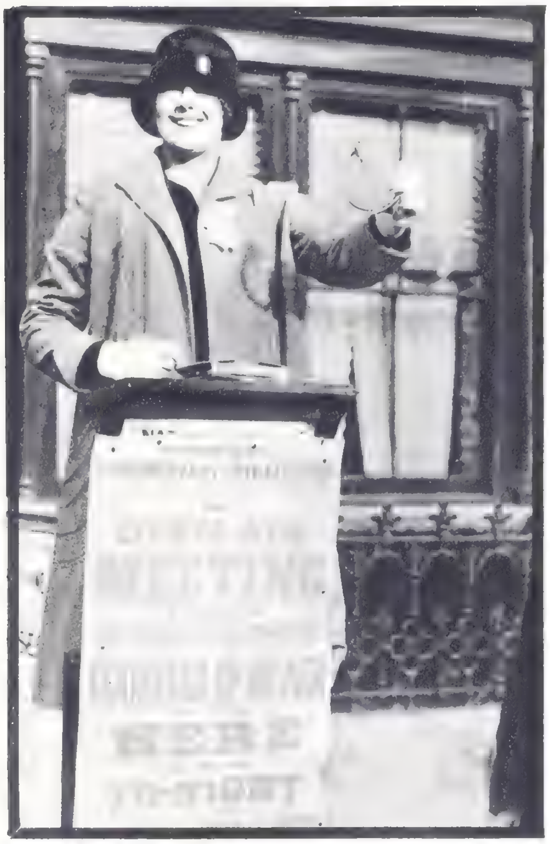
Pittsburgh Aerial Survey

.IV.

London Daily Mirror
VISCOUNT ELVEDEN

London Daily Mirror
LORD AND LADY IVEAGH, LADY PATRICIA AND LADY BRIGID


THE ORIGINAL TRADE-MARK



London Daily Mirror
LADY HONOR GUINNESS

London Daily Mirror

International
MERAUD GUINNESS

London Daily Mirror

London Daily Mirror

GUINNESSES AND WEDDINGS

Most spectacular of the many spectacular events in which London's gay Guinnesses participate are their weddings. They are always attended by a cordon of smart bepearled bridesmaids, who generally contrive to look more smart in tweeds. The parties surrounding a Guinness wedding are memorable. No stout is drunk, but much champagne; and on one long-remembered occasion, because of lack of glasses, the wine was drunk from radiator caps. (Above, center: Mr. Philip Kindersley and Miss Oonagh Guinness; below, center: the Earl of Ava and Miss Maureen Guinness. Right: Mr. Brinsley Plunket and Miss Aileen Guinness. Left: Mr. Loel Guinness and the Hon. Joan Yarde-Buller. Alone, Meraud Guinness had no social wedding.)

London Daily Mirror

London Daily Mirror

MR. WALTER GUINNESS (RIGHT) AND FRIEND

London Daily Mirror

WEDDING OF BRYAN GUINNESS AND HON. DIANA FREEMAN-MITFORD

International

BENJAMIN S. GUINNESS

International

MRS. BENJAMIN S. GUINNESS

London Daily Mirror

KENELM LEE GUINNESS

London Daily Mirror

SIR ALGERNON LEE GUINNESS

Bright Young People

Against their homely background of stout, the Guinnesses brightly glitter. And London society has found new leaders.

IT IS a paradox to delight a Chesterton that the biggest British brewery isn't in Britain and it doesn't brew beer. The brewery of Arthur Guinness Son & Co., Ltd. is British-owned, and it is the largest brewery in the world, but it is situated in the Irish Free State and forms, with the tractor factor of Henry Ford, the chief export business of that troubled dominion.

Guinness brews stout or porter, a thick dark beverage containing about 8 per cent alcohol, called porter because of its extreme popularity with 18th century navvies, sweeps, draymen, and porters. Porter is a London drink and a paternal English Parliament fostered the spread of London porter in Ireland by placing a duty of 5s. 6d. per barrel on all porter brewed in Ireland. In 1777 while the rebellious American colonies were gradually convincing Britain that the indiscriminate taxation of her dependencies was not always wise, the Irish brewing taxes were reduced. A Mr. Arthur Guinness who brewed ale and table beer in an ancient brewery at St. James's Gate, Dublin, undertook the manufacture of Irish porter.

The Guinnesses were Protestants and on excellent terms with the leisurely, moneyed English landlord rulers of Ireland. The rumble of discontent that was to burst so bloodily, so hopelessly in the Irish insurrection of 1793 was already stirring. No sooner did dark tankards of Guinness appear in Irish alehouses than Dublin wags labeled it "Guinness's Black Protestant Porter." Arthur Guinness spoilt the alliteration of this by brewing his porter stronger and calling it stout. To counteract the suggestion of black Protestantism and toadying to the English, he adopted for a label, later a registered trade-mark, that most sacred of Irish patriotic relics, the minstrel harp of Brian Boru, the harp that once through Tara's halls the soul of music shed. There was still another reason why devout Dubliners accepted Guinness's stout. The brewery was at St. James's Gate, and in the ancient days when

[*Continued on page 129*]

Ale, Beer, Stout

A venerable beverage and a venerable industry provide one-tenth of England's revenue. The King and the Church have given their sanction, and in America Mr. Pabst awaits the end of prohibition and installs $1,000,000 worth of brewing machinery.

DR. SAMUEL JOHNSON stood at an auction desk in the cask yard of the old Anchor Brewery in London and fixed the frieze-coated, cocked-hatted bidders with a rheumy eye.

"We are not here to sell a parcel of boilers and vats," boomed the Doctor, "but the potentiality of growing rich beyond the dreams of avarice."

Brewers in America have grown rich beyond Dr. Johnson's wildest dreams. They have wielded enormous political influence, been useful, diligent citizens, been much beloved, but, until very lately (and even now the barriers in some quarters are not altogether let down) they have been rejected by what newspapers vaguely refer to as Best Society. Those bitter protestants who founded these states were so convinced that the liquor which they drank in such Gargantuan quantities was such evil stuff that all who trafficked in it were evil men. Yet none can deny the rebuttal offered this argument by such a family as the Busch family of St. Louis. They have probably done more for St. Louis than anyone since the Jesuit fathers landed there in canoes. Hospitals and schools are thankful to them. And yet, although they move in a small and brilliant society, they have never achieved the impregnable position enjoyed by the brewers of England. In England, on the other hand, British distillers have so frequently been ennobled that the phrase "from beerage to peerage" is as trite as it is an obvious rhyme. The stout-brewing Guinnesses are undisputed leaders of London society. Colonel Gretton of Bass Ale is a power in the Conservative Party—the list is endless. Certainly no such national recognition as is accorded the English brewers has yet been given their American confreres.

This is not difficult to understand. Man has brewed beer as long as man has baked bread and almost as long as he has worshiped God. In England, particularly, brewing was one of the important duties of the medieval church. Beer, to the 14th century yeoman, was both a food and a sacrament. On Christmas Eve, sniveling, shivering villagers would gather under the church porch and shout from the bottom of their hearts:

Bring us in no brown bread, for that is made of bran
Nor bring us in no white bread, for therein is no gain
But bring us in good ale, and bring us in good ale
For our blessed Lady's sake, bring us in good ale.

Bring us in no bacon, for that is passing fat
But bring us in good ale, and give us enough of that.
And bring us in good ale, bring us in good ale,
For our blessed Lady's sake, bring us in good ale.
Bring us in no capon's flesh, for that is often dear,
Nor bring us in no duck's flesh for they slobber in the mere:
But bring us in good ale, and bring us in good ale,
For our blessed Lady's sake, bring us in good ale.

Wide World

PICKING HOPS AT WATERINGBURY, KENT

Because of their hard leaves and distinctive flavor, only the female hops are of value to brewers. But, of course, they have to continue to plant the useless males.

The good priests brought them in good ale. Besides the normal brewing which convents and monasteries did for their own use, there existed in Plantagenet and Tudor England an institution known as Church Ales. Feasting, to the medieval mind, was as much a part of Christian duty as fasting. Theologians argued that a man who fasted after the fifth hour of a feast day was liable to excommunication. That poverty should be no bar to feasting, the churches brewed ales and distributed them freely on the three great Feast Days: Christmas, Easter, Whitsuntide. It was considered a worthy charity to leave bequests for the perpetuation of Church Ales. To this day if you visit Chalk Church near Gravesend, you will see over the western door a little cross-legged goblin grinning over a flagon of ale. He commemorates a "Give Ale" bequeathed by one William May in 1512, that there should be "every year for his soull, an abit; and to make in bread six bushells of wheat, and in drink ten bushells of malt, and in cheese twenty pence, to give to poor people for the health of his soull."

The Church Ales were abused, of course, as the good things of this earth so often are. Church wardens obtained the right to sell Church Ale to obtain money for their parishes. The Reverend Sabine Baring-Gould, who wrote the words of *Onward Christian Soldiers* and was a prodigious antiquary, reports that it was not uncommon in the west of England for the whole south aisle of churches to be filled with beer casks on Whitsunday, with tapsters and alewives knocking out bungs and filling canikins right through morning service. Only under the leadership of harsh-voiced Oliver Cromwell, himself the son of a layman brewer

nd a gentleman farmer, were
ne Church Ales discontinued.

If space permitted, we might
arry on this connection between
eer and the Church indefinitely.
ince innkeepers invariably
rewed their own ale until the
oundation of the great breweries
n the 18th century, the early
istory of brewing is the history
f the inn, and the earliest inns
ither *were* the monasteries or
vere run by the monasteries.
rom the beer-brewing monas-
ery came both the modern inn
nd the modern hospital—but
his should be sufficient to show
ne great background of respec-
ability which surrounds brewing
n Great Britain. Brewing is still
nder royal patronage; the late
ing Edward VII was officially a
Iaster Brewer and so is the pres-
nt Prince of Wales. King George
 has under his personal patron-
ge the Licensed Victuallers Be-
evolent Institution, an asylum
r elderly publicans and retired
armaids. Church and King
like endorse English beers. There
re no higher sanctions.

Let it be at once understood
nat the beer which these great
nd respected brewers, whom we
re about to study, make and
ne beer which most of the rest
f the world drinks are two very
ifferent things. In Germany,
merica, France, Italy, Mexico,
vhen we say beer, we mean
ager beer, literally, stored beer.
Vhen you ask for beer in Great
ritain or talk about beer, what
ou mean and what you get is
le and the precise difference is
his:

> *Ales* are brewed at a comparatively warm temperature in an open vat with a type of yeast which rises to the surface during fermentation.

> *Lager* beer is brewed in a closed vessel at a temperature just a little above the freezing point, with a type of yeast which sinks to the bottom.

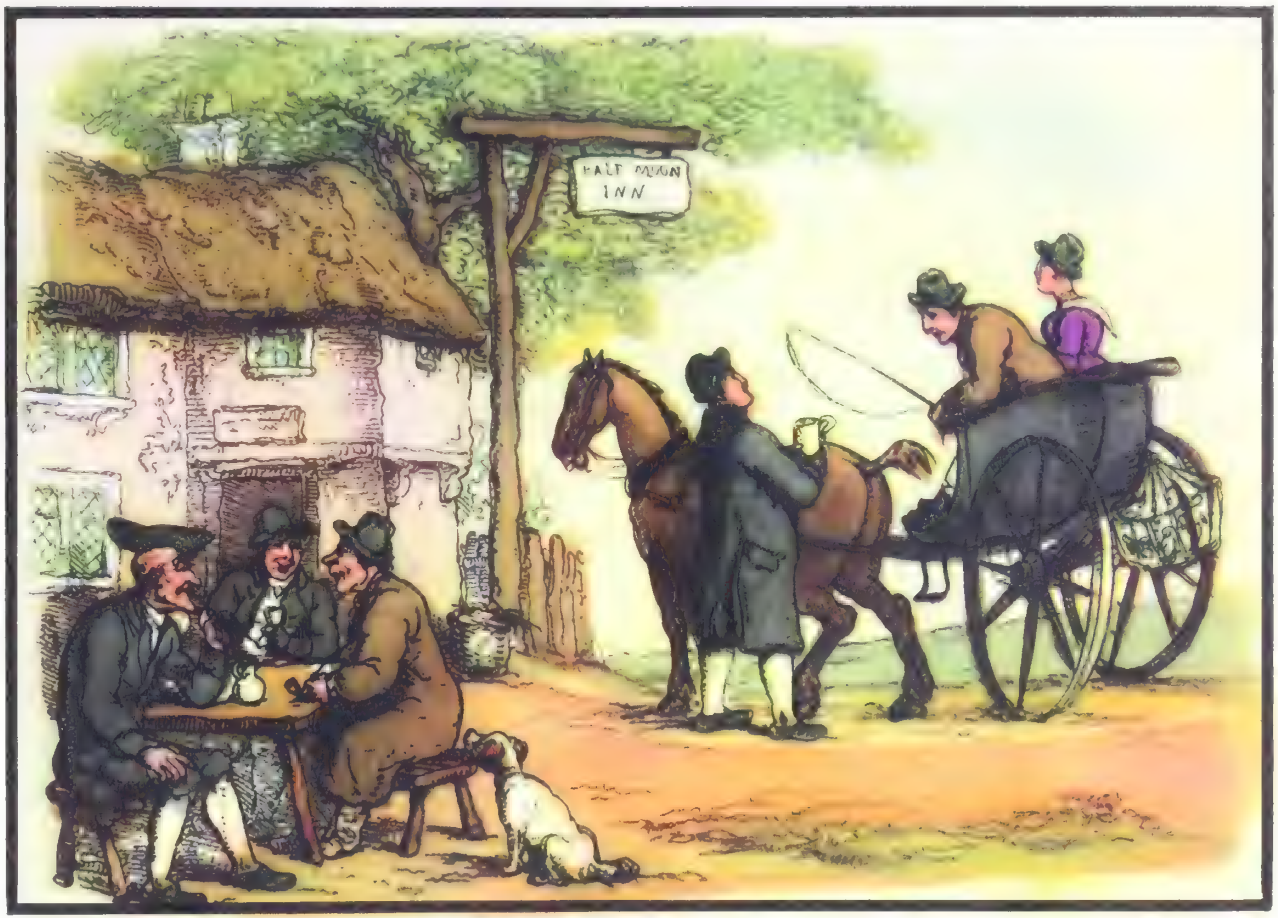
Lager has a secondary fermentation in the cask and must be stored for two or three months at a temperature of about fifty-five degrees. Lager beer is a brighter, cleaner-tasting drink with a low alcoholic content. It must be drunk ice-cold. Ale is a rich, mealy drink and a practical intoxicant, which should never be iced. It is best lukewarm from a pewter mug. There is nothing intriguing about this drink which has had such a profound effect on British literature and British life. It is sturdy, stodgy stuff. But it produces about one-tenth of the revenue of the British Government.

Sanctioned Burton

The fame of British ale is certainly spread over the world. It is doubtful whether the little town of Burton-on-Trent enjoys a similar reputation. Although it should. Burton-on-Trent is to British beer what Detroit is to the American automobile business. There were brewed 24,530,155 barrels of ale in Great Britain last year, paying excise duties of £70,846,978 ($344,000,000). Fully one-third of this beer was brewed and one-third of these taxes were paid by the breweries of Burton. If King or Church wished to visit the shrine of this industry to which, as we have seen, they give sanction, it is to Burton that they would have to journey. And Mr. Snowden, when he thinks of his budgets, must often have Burton in the back of his head.

Burton-on-Trent in Staffordshire, an incorporated town of 48,909 souls, lies almost in the dead center of Britain, but it is connected with Hull and the sea by the Trent, which is navigable to tugs and heavy barges. It is conceivable that an unworldly stranger might stay in Detroit for a week and never realize that city's connection with automobiles. No one could possibly remain in Burton five minutes without realizing that beer is the be-all-end-all of the town's existence. It smells like all the saloons in the world rolled into one; its nine great breweries are its only industry. Those of its inhabitants who do not work in the actual brew houses are making the day hideous by hammering and chopping away in the town's great cooperage yards, working on the river quays, or driving puffing beer lorries over the cobblestone streets.

The basis of Burton's prosperity was her export trade. In the early 18th century when most of the present day breweries in Burton were founded, the town did a thriving business, shipping a light, heady ale that traveled well to Russia, Poland, Finland, and the cities of the



Courtesy Metropolitan Museum of Art

THE HALF MOON INN—*BY T. M. ROWLANDSON*

. . . forerunner of today's English tied house (a pub owned by a brewery and therefore committed to push sales of the brewery's product). Guinness has no tied houses, but Guinness may boast that it is sold everywhere.

THIS LABEL IS ISSUED ONLY BY BASS, RATCLIFF & GRETTON LIMITED
BASS & Co's PALE ALE
TRADE MARK
Bass & Co
THE "DOGS HEAD" BOTTLING
BOTTLED BY
READ BROS. LTD.
LONDON.
BREWERS, BURTON-ON-TRENT
"TRIANGLE" TRADE MARK
abels courtesy Twenty-one

THE BASS LABEL

. . . claimed as the world's first regis-
ered trade-mark.

GUINNESS'S FOREIGN EXTRA STOUT
JAMES'S GATE DUBLIN
PRINTED AND ISSUED BY US
AS OUR TRADE MARK & LABEL
Arthur Guinness Son & Co
LIMITED
No 103700
BOTTLED BY
E. & J. BURKE,
LIMITED.
DUBLIN
WHO SELL NO OTHER BROWN STOUT IN BOTTLE
THE GUINNESS LABEL

. . . featuring Ireland's famed and beloved Harp of Tara.

Hanseatic League (Antwerp still consumes great quantities of Burton ale although her native beers are excellent). In 1827, a ship belonging to Bass & Co. was wrecked in the Irish Channel loaded with ale for India. Thrifty fisher folk salvaged many a keg and discovered that this was a stronger, better brew than they could get at home. That is why Burton ale today, from no matter what brewery, is still labeled India Pale Ale. Of the nine breweries of Burton, four are internationally important today.

August Bass

Proudest of all the Burton breweries is the firm of Bass, Ratcliff & Gretton. Even lesser breweries must admit that when the average person thinks of ale, he thinks almost instinctively of Bass. The first registered trademark in the world was the red triangle that marks every bottle of Bass & Co.'s Pale Ale. The second of all registered trade-marks is the red diamond that Bass, Ratcliff & Gretton use for all their thirteen other brews. It is Burton legend that to secure these coveted places, a loyal employee sat all night on the steps of the registrar's office before it opened in accordance with the Trade Marks Act of 1875.

Royalty smiled upon Bass. One of the company's greatest treasures is an oaken brewing vat, which bears, fixed to its steaming flank, a small cryptic bronze plate:

HIS MAJESTY
KING EDWARD VII
MASHED IN THIS TUB
22ND FEBY 1902

King Edward's mother cinched the ascendancy of Bass over its other Burton rivals by making Sir William Bass, grandson of the founder, Lord Burton. Chairman of Bass, Ratcliff & Gretton today and potentate of all Burton is sixty-three-year-old Colonel Rt. Hon. John Gretton, for the past twelve years member of Parliament for Burton. He inherited £3,000,000 from his father, John Gretton, head of the brewery before him. He looks not unlike Rudyard Kipling and is a Conservative of the Conservatives. With practically no sense of humor but a scrupulous sense of honor, Colonel Gretton is the grand old figure of Burton, where they call him "Honest John." In the House he never makes a speech more than five minutes long. He is a dyspeptic, hence a near teetotaler. Bass property covers 750 acres of Burton land; at capacity, the brewery produces 7,000 barrels of ale a day. Operating income runs to approximately £1,700,000 ($8,000,000) a year while income received from rents, interest on loans, and stock dividends amounts to another £500,000 ($2,500,000).

Friendly Worthington

Worthington & Co. of Burton reported a profit of £736,000 ($3,500,000) in 1928 (last available figures) after interest and dividends on preferred shares, but Colonel Gretton of Bass felt no jealous twinge, for in 1927 Bass and Worthington combined in an exchange of shares which left Worthington's managers free to manage the brewing and distributing of their ales and gave Bass the financial whip. Worthington and Bass, in fact, still sell in opposition in British pubs. In the past three or four years, Worthington has impressed itself on British beer drinkers by an elaborate and extremely clever advertising campaign. A Worthington bottle is thicker than a Bass bottle; it looks as though it held a dram or two more.

Rival Allsopp

Since the Bass-Worthington merger, their chief Burton rival is Samuel Allsopp & Sons, which is incidentally the oldest of all Burton breweries (established 1730). The manufacturing profit ran up to £213,960 ($1,000,000) in 1928, a notable increase over preceding years. Credit for the present sound position of Allsopp's is due to one man, seventy-six-year-old Sir William Barclay Peat, the chairman of the board, and Sir William is not a brewer at all but an accountant—the King's Accountant as a matter of fact. His firm, W. B. Peat & Co., has expanded from the simple business of accounting to the more exacting one of medicine man to ailing corporations. Worried directors, unable to pay a dividend on the ordinary shares since 1901, called in Sir William. So successful was he that in 1918 dividend payments were again instituted and have gradually been increased since.

Burghers of Burton remember Allsopp's as the leading figure in what was known as the Great Bitter Beer Controversy. In 1851, a Mr. Payen chilled the marrow of ale drinkers all over the world by announcing that small quantities of strychnine were used instead of hops to produce the bitterness in bitter beer. Samuel Allsopp & Sons rose in their corporate majesty and awfulness to quash this horrid canard. In 1853, Dr. Stevenson Bushman, a converted believer in the strychnine scandal, published a full retraction. Slyly he alluded to the fact that neither Bass nor Worthington had taken any part in the battle:

"Single handed they [Allsopp & Sons] have fought the battle of bitter beer, their brother brewers of Burton gracefully acknowledging their pre-eminence by allowing them unaided to take the post of danger."

Ind, Coope, the fourth

Ind, Coope & Co., fourth brewer of Burton, is another firm which has risen from the rocks of financial disaster, and of its resurgence there is an amusing tale. We have already seen how many of the earliest inns belonged to the Church. In 1910 the Bishop of Colchester discovered an inn, the Cock & Bell at Romford, that had actually been part of a church, a 15th century chantry house, still retaining its original beams and oak paneling. The Cock & Bell was a tied house belonging to Ind, Coope, but without a moment's hesitation they gave up their rights to the building, turning it over in fee

Wide World

BARLEY GERMINATING IN TANKS

Having lain in water for fifty hours, the barley is allowed to germinate for seven or eight days, after which the starch, chief ingredient of barley, mysteriously becomes suitable for brewing.

Courtesy Jacob Ruppert

WORT KETTLES

Wort is the sweet liquor extracted from the ground and mashed barley. Hops are added to the wort, then yeast for the fermentation, and the result, after much waiting and adjustment of temperature, is ale.

de World

HE OPTIMISTIC MR. FRED PABST SR.

. of the Pabst Corporation, who confidently expects e end of prohibition and is now installing in Mil-ukee $1,000,000 worth of new brewing equipment.

nple to the Bishop of Colchester, who romptly restored it as Romford's parish house. Now in 1910 Ind, Coope was in an even orse financial condition than Allsopp & ons. They were actually operating in the ands of receivers, but no sooner did the ock & Bell go back to the Bishop of Col-ester than the Lord smiled on Ind, Coope Co. They paid off their deficit; they re-red their old stock; for the one public house hich they gave back to the Bishop, they ac-ired forty more in 1924; they rose to the sition of fourth biggest Burton brewer and w report annual operating incomes that pproach £350,000 ($1,700,000).

Water into Ale

Iechanics of the Brewery.

FOR the making of good ale, the most important ingredient is neither pure alt nor good hops, but water. The science brewing has become so exact that a skillful rewer can imitate almost any type of beer existence, but he can't imitate the water Munich or Pilsen or Vienna or Copen-agen—not quite. The living springs of urton-on-Trent are considered so ideal for e brewing of ale that brewery chemists in ss favored districts have taught their em-loyers how to "Burtonize" their water. he main requisite for brewing water is that must be hard. Soft water dissolves the arch and sugar in the malt too readily and akes the brew ferment too quickly. Dublin, e home of Guinness Stout, is a soft water ty, but stout is a much sweeter and stronger uff than bitter ale. In the U. S. the good German brewers of Milwaukee and St. Louis have found ordinary Mississippi water ideal.

The basic process of making beer is not much more complicated than the process of making soup. Zulus make beer. They take a gourd full of grain, dump it in a hollow log with a bunch of bitter herbs for flavoring, fill the log with water, wait for air-born yeast to ferment it, and then they drink it. Long centuries ago people discovered that stored grain which had begun to sprout (i.e., malt) brewed more easily and made better beer. These same early delvers in the art of brewing learned that while beer can be made of almost everything from rice to potatoes, barley made the best beer. And so John Barleycorn became a literary figure.

A malting in a modern brewery looks not unlike a giant deserted subway. From an acre of level cement floor, scrupulously clean, rise squat tiled pillars to support a vaulted ceiling. It is from the malting floor, by the way, that the first of these various rich smells arise which make brewing such an odorous industry. After being washed and soaked in cisterns for several hours, the barley is first piled in heaps on the malting floor to start germination. Brewers, who are used to it, compare the odor of malting barley to new-mown hay—that is one definition. Experts watch it constantly, regulate the temperature of the room. Malsters walk about the floor wearing special malting shoes of thick oak-pegged sole leather, spreading the grain out and turning it over with broad wooden paddles which are known to the trade as ploughing sticks. When the malt is complete, when the growing spear of grain is about half an inch long, it is shoveled into kilns and the life that has been laboriously created is scorched out. For brown ales and porter, a small portion of the malt is actually roasted. Malted grain must be ground, but very loosely, to about the consistency of bran.

At just what dim distant date brewers, who once used all the balms of Araby to flavor their beer, chose the wild hop flower as the ideal imparter of bitterness, nobody knows. At least three centuries ago, British brewers were quite as proud of what they called their "heavily-hopped English ales" as they are today, and hops had been used on the Continent even longer. Hops grow wild in the hedges nearly all over northern Europe, but there are only certain small districts where hops can be raised for brewing. There are hop plantations in Saxony and northern Bavaria, in Kent and Surrey, New York and Oregon. There are male and female, and it is only the stiff parchment-like petals of the *female* hop flower that are good for beer. Hop-growers, of course, must plant the useless males among the females, but four or five of these vegetable chanticleers are enough to pollenize an acre.

Kent is the hop garden of England. Motor through Kent in midsummer, and you will see mile on mile of fields that are green forests of vine-covered fifteen-foot poles. Moving like giants above the earth, the hop-men shuffle up and down the rows on ten-foot stilts, tying new lines to the poles. For most of the year hop cultivation is a simple business requiring little labor, but once a year comes the hop-picking, "the poor man's holiday." Armies of unemployed laborers, men, women, children, and tramps looking for a free meal sweep down on the Kentish hop fields, as in the days before mechanical reapers, cotton-pickers swept across the South. Kentish farmers lock up their daughters and householders their silver, for hop-pickers are a motley lot. Indeed, the Kentish hop harvest is an important social problem. The British Government is not at all anxious to modernize the hop fields as they have been modernized in Oregon, where one machine can pick an acre of hop flowers in an hour. Hop-picking is simple, unskilled labor, anyone can do it, and the annual Kentish invasion is safety valve for the ever-pressing problem of British unemployment. London churches send special missions to the hop fields, welfare organizations send tents and blankets, set up community kitchens.

London Daily Mirror

BASS WEDDING

. . . of Mr. John Frederick Gretton (only son and maltster for the Rt. Hon. John Gretton, M. P.) and Miss Margaret Loeffer.

These are the raw materials: water, malt, and hops. For the actual brewing of beer, F. W. Salem's *Beer, Its History* describes the whole thing accurately in half a paragraph: "A certain quantity of malted barley is taken and ground, it is then mashed with hot water, the sweet liquor or *wort* extracted, a portion of hops added and the whole boiled until the preservative quality as well as the aroma of the hops is obtained. It is then allowed to cool, and afterwards fermented with yeast to produce the small quantity of alcohol it contains to give it life."

But the mutations of this system constitute the trade's jealously guarded secrets.

PAUL OLIVER AND OLIVE PALMER, PREMIER DUET OF THE AIR

SINCE DECEMBER 3, 1927, PAUL OLIVER (FRANK MUNN) AND OLIVE PALMER (VIRGINIA REA) HAVE FEATURED THE PALMOLIVE HOUR. FAMOUS IS THE PALMOLIVE HOUR; NOT SO WELL-KNOWN IS THE FACT THAT ALTHOUGH IT IS BROADCAST ON THE NATIONAL BROADCASTING CHAIN AND CLASSED AS A N. B. C. HOUR, IT IS ACTUALLY PRODUCED BY SOUND STUDIOS OF NEW YORK, INC., UNDER THE DIRECTION OF GUSTAVE HAENSCHEN AND FRANK BLACK, ITS ORIGINATORS

Radio Advertising

How many listeners to a program? How many purchases to a listener? Questions o which the answers have been obscured by radio's being not business but pleasure.

DURING the twenty-five years in which advertising has been recognized as a orthy calling, an incalculable quantity of search has been done on the magazine as n advertising medium. Thus the advertiser ho wishes to purchase magazine pages has his command an impartial and an uthoritative circulation figure plus a less npartial but still very useful circulation reakdown in terms of where magazine eaders live, who they are, how much money ey make, and whether or not they like range juice at breakfast.

Not so with radio. It is now eight years nce the American Telephone & Telegraph ompany began selling radio time in an tempt to meet the operating expenses of ation WEAF. The Telephone Company harged $100 for a ten-minute talk and was romptly flayed by *Printers' Ink* for introducing an "objectionable" medium.

Radio advertising is still at a point in hich it is possible to claim everything and deny everything, and very difficult to rove anything. The magazine has learned approach the topic of magazine advertising from the standpoint of the advertiser. he radio station has a very strong tendency ward approaching the topic of radio advertising from the standpoint of hoping that may be able to keep the advertiser from poiling the program. This point of view is of ourse changing, and the growing radio influence of the advertising agency is greatly ccelerating the change. But radio's tremendous potentialities as an advertising edium will never be adequately realized ntil the broadcaster accepts the advertiser something more than a snake of commercialism in an Eden of entertainment.

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For purposes of summarizing the best ontemporary information, the question of adio advertising is divided into two parts:

I.—How Many People Listen?

Takers of the 1930 census asked all families hether there was a radio among the household possessions, but the official radio census gure will not be released for some months to ome. Meanwhile, however, the Electrical quipment Department of the U. S. Department of Commerce has issued an estimate of 13,478,600 sets as of July 1, 1930. A typical radio method of reaching an audience-estimate from this statistic would be to multiply 13,478,600 by 4.1 (the number of persons per family) and thus demonstrate that a radio program will reach more than 50,000-000 hearers. An independent research organization—Crossley, Inc., emphatically not to be confused with the radio Crosley—uses a 3.1 listener-per-set figure, which is certainly a better figure for the advertiser who is interested chiefly in adults and from which the total radio audience would be estimated at 40,000,000. From a practical standpoint, however, the most vital radio statistic would be not the number of people reached by radio but the number of people reached by *a given radio program*. So let us see how far we can go toward determining this extremely elusive figure.

The advertiser who is going into radio on a national scale is likely to choose either the National Broadcasting Company network or the Columbia Broadcasting System network. National operates two major networks, the Red, headed by station WEAF, and the Blue, headed by station WJZ. The Red network includes twenty-one stations extending as far west as Kansas City and Lincoln. Eight of the thirteen Blue cities are also on the Red network. There are also six supplementary N. B. C. networks sold in units in connection with either the Red or the Blue basic chains and giving a national coverage through thirty-nine additional outlets. Columbia has only one main network, with twenty-five outlets in twenty cities. It also extends as far west as Kansas City and Omaha, covering much the same country as the rival National networks. Columbia has also its supplementary networks, with coast to coast coverage through forty-nine additional outlets.

But it is also possible for the advertiser to secure national coverage without appealing to either of the major networks. Indeed, the most extensive radio program now on the air (the Chevrolet hour on 138 stations) is handled neither by National nor by Columbia. It is a presentation of the World Broadcasting System, which, with its associated Sound Studios of New York, Inc., is a new and disturbing arrival in the radio field. By means of electrically recording its programs and sending them out on discs, the World Broadcasting System can give the advertiser as many stations as he wants to buy, including stations on both chains. We shall have more to say below concerning World Broadcasting and the vigorous competition which it is already giving to both National and Columbia, but meanwhile let us get back to the more immediate subject of radio audiences, while remembering that the advertiser does not need to think of broadcasting entirely in terms of the two major chains.

Both National and Columbia maintain that they reach approximately 90 per cent of all U. S. radios. But it is only in National or Columbia offices that this figure is accepted. The best evidence that the 90 per cent estimate is altogether too high is furnished by the Chevrolet program already mentioned. This program is taking 138 stations, or more than twice as many stations as the entire N. B. C. group. Chevrolet would not purchase 138 stations if it thought it could reach 90 per cent (or anything in the neighborhood of 90 per cent) of radios with the chain hook-up. It is therefore impossible to accept the National estimate of 10,467,000 sets on its Red hook-up or of 10,085,000 sets on its Blue hook-up or the Columbia figure of 13,147,500 Columbia sets.

It is also impossible to estimate how many sets the chains actually do reach. Fortunately, however, the government figures already referred to will soon supply an authoritative and detailed city-by-city radio census. Meanwhile, let us arbitrarily assume that a given advertiser knows that there are 8,000,-000 sets in the territory covered by his broadcast, and let us see what he knows (or can find out) about the number of those sets that are tuned in on his program. Not all the sets in his territory are operating during his broadcast and not all of those operating are listening to his program. How much of his 8,000,000 circulation does he actually get?

The most reliable information on these questions is supplied by the already mentioned Crossley company, which is currently engaged in a radio survey prepared for the Association of National Advertisers, Inc., and a group of about fifty large advertisers who have a direct interest in the collection of impartial radio evidence. The Crossley company plans to interview 70,000 people, representing all classes and all types of localities, and has already tabulated results from 48,000 such interviews. According to the Crossley report, 75 per cent of radios are in daily use, or, in other words, the actual radio audience is equal to three-fourths of the total radio audience. Furthermore, Crossley reports that two radios out of every three are working every night. Sunday listeners are

© Photos International

KDKA: THE BIRTHPLACE OF BROADCASTING

Pioneer radio station was KDKA, which Westinghouse Electric & Manufacturing Company established in 1920. It was located in Wilkinson, suburb of Pittsburgh.

THE "LOG CABIN" OF BROADCASTING

An exterior view of the same KDKA station. It was a converted garage belonging to Dr. Frank Conrad. First great broadcast was the Harding election.

somewhat below the average; the other six days do not much differ. So our advertiser with 8,000,000 sets can count upon having 5,300,000 of those sets in action on the night he is broadcasting, but not necessarily on his hour or his program.

And there is a very decided hour-by-hour fluctuation, with the peak at about 9 P.M. Crossley figures that out of *all* radio sets, and on *any* given night:

1/6 are in use at 6 P.M.
1/3 are in use at 7 P.M.
2/5 are in use at 8 P.M.
1/2 are in use at 9 P.M.
1/2 are in use at 10 P.M.
1/3 are in use at 11 P.M.
1/4 are in use at 12 P.M.

During the 8 P.M. to 10 P.M. period, therefore, our advertiser can assume that of 8,000,000 sets in the area, nearly 4,000,000 are tuned in at his time, with an average of about 3.1 listeners each—a total of 12,400,000 listeners.

How many of those listeners are listening to his program? This is the final division and of course the most difficult, since the answer depends chiefly upon the program itself. The most popular program on the air is the Amos 'n' Andy program to which from 50 to 55 per cent of daily radio users habitually listen. No other program, however, rated more than 40 per cent and 25 per cent was very good. Mr. George Washington Hill (who hears in rehearsal and approves all his Lucky Strike programs) says that a good program will have 30,000,000 listeners where a poor program will have 8,000,000. However, let us assume that our advertiser has an A-1 program and let us credit him with attracting half of the listeners during his time. As half of 12,400,000 is 6,200,000, this final figure represents the actual audience.

In more general, and in simpler figures, out of every 100 families in the broadcast district, the advertiser who is on the air between 8 P.M. and 10 P.M. with a first-class program will have:

65-70 families on the air that night;
46-50 families on the air during his program;
23-25 families listening to his program.

• • •

Also included in the matter of radio listeners is the matter of cost per listener. Here, by granting the networks about 10,000,000 sets each (a generous estimate) and accepting the network philosophy that all the sets listen to all the programs of the network, we can obtain some remarkable set-per-dollar figures—something like 1,500 sets-per-dollar on the N. B. C. Red and 1,600 on the Blue (with supplementaries). Such figures are so misleading, however, that it is more intelligent to consider merely some representative radio appropriations and at least arrive at the scale of radio operations.

The advertiser who appears once a week, thirty-nine weeks a year, in half-hour periods on the most extensive N. B. C. hook-up, will spend for his time a little more than $250,000. His talent costs vary sharply with his program. The Chicago Symphony gets $3,000 per appearance. Talent on such programs as the Seiberling, Firestone, and Westinghouse hours cost more than $2,000. A good standard program is obtainable for $1,000. Suppose that our hypothetical advertiser is ambitious enough to put on a $1,500 entertainment. His talent will then cost about $60,000 and his total cost will be $310,000 for the thirty-nine-week period.

Some actual radio costs (time only) of notable 1930 radio advertisers are:

American Radiator	$210,000
Armour & Co.	250,000
General Electric	433,000
General Foods	260,000
General Motors	332,000
Quaker Oats	268,000

The 1929 newspaper and magazine appropriations of the same advertisers were:

American Radiator	$743,000
Armour & Co.	541,000
General Electric	4,170,000
General Foods	6,500,000
General Motors	18,630,000
Quaker Oats	1,450,000

It is obviously possible to do a thoroughly good radio job for very much less than it costs to secure national coverage in space. Few advertisers use the maximum hook-up, a group of between thirty and forty stations constituting a very considerable network. The time unit (once so universally considered an hour that all radio programs are still referred to as *hours*) has shifted to the half-hour. Mr. George Washington Hill and his Lucky Strikes continue to use the full hour, since Mr. Hill wants three selling moments and needs an hour for them, but full hours, though not unusual, are distinctly a minority. Another time trend (well illustrated by Amos 'n' Andy) is the fifteen-minute period, repeated on a daily or almost a daily schedule.

On the whole, the cost item on radio is far from being prohibitive. In the past, at least, money spent on radio advertising has been added to the general appropriation and has not involved sacrificing other media. The uncertainties of radio, rather than its expense, have handicapped it. We have already discussed the circulation question in radio. Let us now turn to the question of radio's selling force.

I.—DOES RADIO SELL?

How, when, and why the radio ollar returns.

Partly because a good many broadcasters re satisfied to check their radio investment gainst general goodwill (and the goodwill alue of such programs as the A. & P. Gyp- es, the Palmolive Revelers, or the Fleisch- ann-Vallee concerts is unquestionably ery great) and partly because it is usually npossible to unscramble radio-made sales om sales of other origin, it is sometimes con- uded that radio is not an efficient sales gent. This conclusion is, however, incorrect. adio results not only in general goodwill, ot only in institutional advertising, but also direct and immediate sales. In this ill year f 1930, very few companies have any sales icreases to report, so that before-and-after adio figures would be unfair and misleading. here are, however, a good many examples f radio results which make it impossible to oubt radio's selling capacity.

The best instances of radio as a direct alesman are furnished by spot broadcasts— hat is, broadcasts intended to sell a given roduct in a given territory and within a iven period. Two recent and shining exam- les of the spot broadcast are furnished by eorge Ziegler Co., Milwaukee candy- iakers, and Carson, Pirie, Scott & Co., hicago merchants and manufacturers. The iegler Co. introduced *Betty Jane*, a new rand of box candy, with broadcasts over ation WTMJ. Their program as built around a "contest," the rchestra playing various un- amed songs and the audience inning prizes by sending in lentifications. At the end of five eeks, the Ziegler company had old, in the Middle West, twenty- even tons of *Betty Jane*, gave adio full credit for the success of heir campaign. Carson, Pirie, cott had somewhat the same roblem. They manufacture *Bobo- nk* stockings and had decided to hange *Bobolinks* from the seam- ess to the full-fashioned variety. hey ran three broadcasts on VMAQ, Chicago, announced he new *Bobolinks*, and sold ap- roximately 200,000 pairs in hree weeks. Here are two excel- ent demonstrations of the fact hat the listening audience is also purchasing audience, that radio an be used to make direct and mmediate sales.

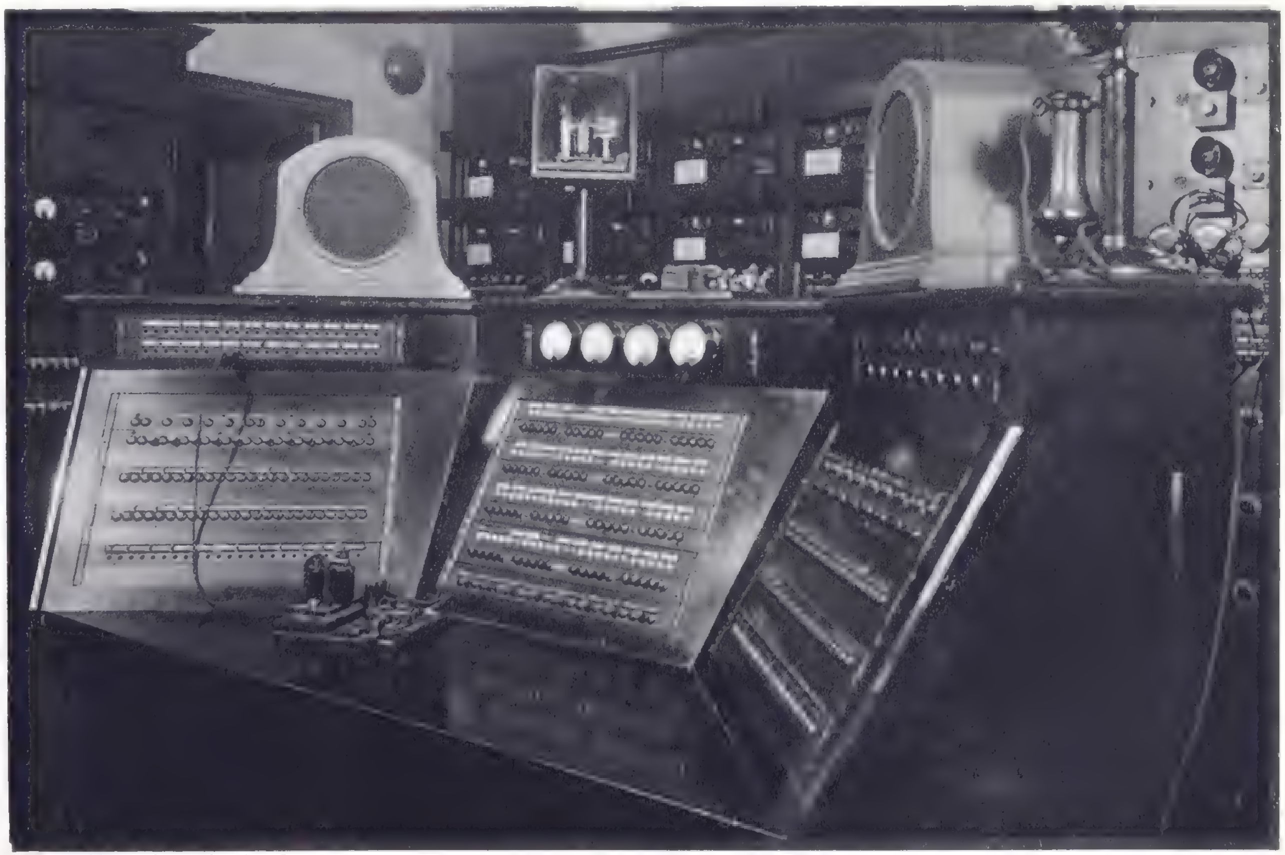
It is true that radio stories rom national radio advertisers end to consist of brilliant but iso- ated examples. There is, for in- tance, the famous farmer who valked into a Cities Service sta- ion, said that any company upplying the fine music (at that ime it was Goldman's Band) on the Cities Service broadcast was a good company, and took from his pocket $3,000 to invest in Cities Service stock. Even though it be added that Cities Service in April of 1929 traced to radio the sale of 29,000 shares of Cities Service common (of course without direct stock selling by air) and has distributed during the past year more than 150,000 copies of its budget book, the 1929 bull market was a factor in the stock sales and the budget books come back again to goodwill. A similar impressive but isolated instance is found in the Tide Water Oil Company broadcast which, celebrating the return of Admiral Byrd, distributed—from one program—more than 150,000 souvenir booklets. There are innumerable such radio experiences, ranging from those just mentioned to instances such as the story of the 500 pairs of Interwoven Sox ordered by a Richmond, Virginia, magistrate as a Christmas present for the police department shortly after Billie Jones and Ernie Hare, pioneer radio gag team, had ceased being the Happiness Boys and turned into the Interwoven Pair.

But there are also examples of radio-inspired purchases not dependent upon an individual or a temporary enthusiasm. Possibly the simplest method of tracing radio results in their more general form is to begin with campaigns obviously suited to broadcast advertising, to continue through products that do not immediately suggest a radio tie-up, and to conclude with products which radio has not as yet successfully distributed. The second class is of course by far the largest and represents also the greatest undeveloped possibilities.

Obvious radio "naturals" are such campaigns as the Radio-Keith-Orpheum hour, the Atwater Kent and Majestic hours, and the Roxy and Capitol theatre hours. Here the sponsor is selling, directly or indirectly, entertainment itself, and an RKO recital by (for instance) Ruth Etting evidently combines sales and amusement in the most thorough and admirable manner. From the same standpoint, Mr. A. Atwater Kent sells Atwater Kent sets directly (you can hear this and every other program perfectly with an Atwater Kent set), indirectly (by stimulating set sales through an attractive broadcast), and institutionally (through association with the Atwater Kent "quality" music). In these and similar cases radio is entirely an opportunity and not at all a problem.

And almost equally well adapted to radio are programs in which the broadcast permits logical and extensive sampling of the product. The Newscasts and Newsactings of *Time*, the current events talks of the *Literary Digest*, and the campaign in which *True Detective Mysteries* presented dramatizations of its thrillers are applications of the sampling idea. Inasmuch as the *True Detective Mysteries* campaign ran the circulation of the magazine from 190,000 to 690,000 in a six-month period, the effect of such programs can hardly be disputed.

It is also frequently possible for the advertiser to discover a radio tie-up which while not so superficially apparent is fundamentally as logical as those already cited. The Metropolitan Life Insurance Co., for example, has distributed, through broadcasting, more than a million copies of its health booklets and



Courtesy National Broadcasting Co.

CONTROL BOARD AT N. B. C.'S FIFTH AVENUE STUDIO

Here is the studio's technical center of being. Here converge thousands of miles of telephone and telegraph wires, and here sits the control man who supervises the quality, the volume, and the clarity of every sound sent forth into the air. Every program of the network is under his control, and at a touch of his finger all sounds would cease.

VINCENT LOPEZ

BEATRICE BELKIN

Photos Courtesy National Broadcasting Co.

PHIL COOK

exercise charts. The Metropolitan makes no attempt to sell life insurance. It will not even give its salesmen the names of the people who write in for the booklets or apply those names to mailing list activities of any sort. But while Metropolitan is not selling *policies*, it is certainly selling *health*. In terms of policyholders who live longer and who are sick less frequently, it is getting an excellent return for its investment. The sponsor of a campaign such as the Metropolitan's must obviously be a leader in the field it occupies, but granted such leadership the possibilities of indirect selling are most extensive. The various institutes and associations, for instance (copper, brass, lumber, laundry, and whatnot), should find radio particularly well suited to the sale not of a company or of a product but of an industry and of the general services it renders.

A very different type of radio appropriateness is found in campaigns such as that fostered by the Benrus Watch Company. Here the product has no great radio tie-up (except the time-of-day information), but radio is particularly adjusted to the advertiser's appropriation. The Benrus company, after some years of magazine advertising, decided that their advertisements were not attracting enough attention. They could not afford to buy sufficient magazine space to make their campaign outstanding. With the beginning of the present year, they abandoned space advertising entirely, took a larger appropriation, and went into a concentrated air effort. Almost immediately dealers who had been previously unimpressed began to call for more Benrus watches, and dealers who had never carried the line began to stock it in reply to consumer requests. Furthermore, in those districts best covered by Benrus broadcasting, Benrus 1930 sales showed a slight increase over sales for 1929, despite the fact that some authorities estimate that the jewelry business in general has declined at least 50 per cent. In the present state of radio, it is possible for the relatively small corporation to be a conspicuous air advertiser whereas the same appropriation would give him an inadequate coverage on a national magazine basis.

We come next to the very large class of products in which radio offers no particular advantages. Indeed, it may be considered to offer distinct disadvantages on the theory that unless a product is particularly adapted to a painless selling talk, the program will either force too much selling upon an audience interested primarily in entertainment or will evaporate entirely into a vague and intangible goodwill. Here is rather a sound argument, since the advertising agency position that it is easy to make selling palatable and the broadcasting studio position that all selling is poisonous are so extreme and so contradictory that they prove nothing except the existence of a real problem. To this problem there are three main solutions.

In the first place, if the program itself is excellent, the audience will stand a considerable amount of undiluted salesmanship. The Fleischmann hour with Rudy Vallee,

VAUGHN DE LEATH

VIRGINIA GARDINER

Radio people feel that the real radio stars are those produced by radio itself. Vincent Lopez, with his familiar "Lopez speaking," rose to fame via radio. Beatrice Belkin, now of the Metropolitan Opera Company, belonged formerly to Roxy's Gang. Phil Cook, of the Quaker Oats hour, acts all the parts in the Quaker Oats radio drama. Virginia Gardiner is the featured actress in Death Valley Days, in which the Pacific Coast Borax Co. tells the story of the famous Twenty-Mule Team which hauled borax from Death Valley. Vaughn de Leath was the first radio crooner. She developed the crooning technique to save radio tubes, found that it also pleased the public. From the standpoint of the radio studio, no voice is a good voice until it has proved itself a good radio voice. Good stage or concert voices do not necessarily qualify. Radio has not as yet produced its Barrymore, its Bernhardt, or its Shakespeare. The Amos 'n' Andy sketch is frequently considered the closest approach made thus far toward a generic radio art. But radio eagerly awaits the development of true radio drama.

e Palmolive hour with Olive Palmer, Paul
liver, and the Revelers, and the Lucky
trike hour with the Rolfe orchestra are
ree of the most attractive "talent" hours on
e air. They all have continuities which the
udio continuity writer would hardly recog-
ze as such; they do not struggle through
tile attempts at linking fox trots and
altzes with yeast, soap, and cigarettes; and,
radio programs go, they have a good many
ore seconds of straight sales-talk than the
dio people would approve. Yet during the
st three months of 1930, Fleischmann sales
n a little over 10 per cent in advance of
rresponding 1929 sales. And Mr. George
ashington Hill, American Tobacco Co.
esident, says that in his first two months
broadcasting (September and October,
28, a period during which his newspaper
vertising was curtailed), Lucky sales in-
eased 47 per cent almost solely as a radio
sult. In short, a superlative program will
one for much salesmanship.

In the second place, it does not require
uch time for the modern advertiser to tell
s story. The whole tendency of current ad-
rtising is toward the short, quick, immedi-
ely comprehended "message," instantly
preciated whether on the air or on the
inted page. Mr. Hill's slogan about reach-
g for a Lucky instead of a sweet is a good
ustration of the glorified slogan type of ad-
rtising which involves no lengthy argu-
ent, no extended presentation. Besides, it
ould be remembered that we are not con-
dering radio advertising except as a com-
ement to printed advertising. With very
re exceptions, the advertiser cannot afford
rely upon radio advertising alone, and for
e very reason that his program does belong
his audience so much more than it belongs
him. But assuming that he is also employ-
g printed pages, which certainly are his
operty and in which he can tell his story at
hatever length he sees fit, the limited time
his command in a broadcast should be
fficient for him at least to repeat the high
ots of his printed campaign. Thus the
eischmann and Palmolive testimonials re-
ted in the Fleischmann and Palmolive
urs are excellent reminders of those same
stimonials as they appear in their more
fective newspaper and magazine forms, and
ve radio "copy" at least a reminder value
milar (but much superior) to the reminder
lue of billboards, signs, and car cards.

Furthermore, it is sometimes possible for
e advertiser to find in his product itself a
gitimate story which can be inoffensively
hearsed at very considerable length. Thus a
ature (in fact *the* feature) of the Davey Tree
xpert program is the ten-minute talk which
r. Martin L. Davey himself gives on trees.
he Davey company admits that it intro-
uced this talk "against all advice," and it is
deed easy to imagine the consternation
at such a program-element would produce
the radio studio. Yet the Davey business
r the first six months of 1930 (also Davey's
st six radio months) was 15 per cent greater
an its corresponding 1929 business, in

[*Continued on page 113*]

Tuesday, November 4, 1930

WJZ

Hour P.M.	*Program*	*Event*
6:00	Raising Junior **September 16, 1930*	In which Peter Dixon and Aline Berry (Mrs. Peter Dixon) dramatize the problems of Junior's rearing and diet for the Wheatena Corp.
6:15	Savannah Liners Orchestra *December 18, 1928*	In which Harold Sanford weekly directs a program of popular numbers for the Ocean Steamship Company of Savannah.
6:45	*Literary Digest* Topics in Brief—*February 24, 1930*	In which Lowell Thomas daily reviews the news for Funk & Wagnalls Company.
7:00	Amos 'n' Andy *August 19, 1929*	In which Freeman Gosden and Charles J. Correll nightly portray the complexities of Harlem life for the Pepsodent (tooth paste) Company.
7:15	Benrus Orchestra *August 12, 1930*	In which Sam Lavin weekly directs such numbers as *Get Goin', Lovin' You, I'll be Blue Just Thinking of You* for the Benrus Watch Company.
7:30	Phil Cook—The Quaker Man *January 1, 1930*	In which Mr. Cook, the one-man show, dramatizes the story of Pop Dingle and his son, Abner, and the city boy, Eddie, for the Quaker Oats Company.
7:45	The Adventures of Polly Preston *September 24, 1929*	In which Lucille Wall (Polly Preston) and Anthony Stanford (the secret service man) chase crooks and spys all over Europe for Nathaniel Fisher & Company (Polly Preston Shoes).
8:00	Pure Oil Orchestra *February 2, 1929*	In which Wayne King conducts and a male quartet fills the air with new and old-time favorites.
8:30	Big Guns *June 6, 1930*	In which N. B. C. presents war episodes written by Lawrence Holcomb of its staff and produced by Vernon Radcliff. Walter Glass is the hero-lieutenant and Charles Webster is the captain.
9:00	Tek Music *June 11, 1929*	In which Johnson & Johnson Company's orchestra under the direction of Murray Kellner are assisted by Lucien Schmidt, cellist; Bon Byron, tenor; and Vee Lawnhurst, pianist, in a weekly program of "parlor" melodies.
9:30	Death Valley Days *September 30, 1930*	In which the story of the famous Twenty-Mule Team which hauled borax from Death Valley 165 miles to the railroad is dramatized by Virginia Gardiner, Jack McBride, Wm. Shelley, John White, Vernon Radcliff, for the Pacific Coast Borax Company.
10:00	Westinghouse Salute to Radio *November 6, 1929*	In which Frederick G. Rodgers outlines the technical development of radio and Zoel Parenteau and T. J. Vastine direct a string ensemble playing Brahms, Romberg, Kalman.
10:30	Cuckoo Program *January 1, 1930*	In which N. B. C.'s Ambrose J. Weems propounds "Popular Music with Footnotes" and tells his audience just what each popular song really means.
11:00	Slumber Music *February 1, 1927*	In which Ludwig Laurier nightly directs a N. B. C. string ensemble playing numbers from Mozart, Tyler, Keler-Bell. On Sunday evening Mr. Laurier conducts his ensemble under the sponsorship of the Kellogg Company in a program of Kaffee Hag Slumber Music.
12:00	Art Kassell's Orchestra *July 12, 1930*	In which Mr. Kassell broadcasts an hour's dance music from the Metropole Hotel in Chicago at the end of which N. B. C. signs off "until 6:45 tomorrow."

* *Date of first N. B. C. broadcast.*

National Broadcasting Company, Inc.

It is owned by the Radio Corporation. It is the Father of Network Broadcasting. And it does not like to think of its radio child as straying too far from home. It eagerly awaits the development of a "Radio Art."

THE National Broadcasting Company is a corporation in form. It is a broadcasting service in function. Besides, it is a good influence on radio and an excellent advertisement for the Radio Corporation of America, which owns it. It is also a Mecca for nearly everyone who can sing or who thinks he can sing. And it is vociferously devoted to what it calls the "Radio Art." Perhaps this devotion is N. B. C.'s most distinguishing characteristic. They do feel, down at their own building, 711 Fifth Avenue, that they are custodians. Custodians of radio and especially of the public's faith in it. In a ten-year period, radio has become a Third Estate of entertainment. Economically it is much more healthy than the theatre and it is at least as healthy as the cinema. The usual radio owner uses his set for more than two hours a day. And for all the amusement it gives him, he does not pay a cent. Giving pleasure (also instruction) to 13,478,600 families and not charging them for it is a considerable accomplishment. And an accomplishment which N. B. C. regards peculiarly as its own.

Courtesy National Broadcasting Co.
AN N. B. C., NOT A ZIEGFELD GIRL
The receptionists at National Broadcasting have been carefully chosen with an eye to their scenic effect.

For this attitude there is no lack of reason, although it is not shared by the Columbia Broadcasting System or by some 611 U. S. radio stations or by the makers and distributors of recorded broadcasts. Yet it must be remembered that National Broadcasting Company was last month four years old and that in the radio business a four-year-old is grave and reverend. N. B. C. descends from all the fine radio brains of Westinghouse and A. T. & T. and General Electric. Many of its 1,200 employees worked for radio in the days when radio was still a squeal and a whistle. And between the broadcasting of 1926 and the broadcasting of 1930, the difference is chiefly N. B. C.

Courtesy National Broadcasting Co.
N. B. C.'S FIFTH AVENUE ADDRESS
A Mecca for all who think they can sing. But not more than one applicant in 200 qualifies.

• • •

Today, with radio a national institution (about half the world's radios are in the U. S.), radio has become a major industry and broadcasting an important business. In 1929, sales of radio sets and equipment passed the $800,000,000 mark, and there were 1,252,802 hours of air broadcasting, of which about 33 per cent were commercially sponsored. In 1927 advertisers on the two great networks (N. B. C. and Columbia) spent less than $4,000,000. In 1928 they spent $10,000,000. In 1929 they spent $19,000,000. And for the first seven months of 1930 they spent at a rate at which the complete 1930 expenditure would amount to about $25,000,000. It must also be remembered that the money spent with the two networks does not include the money spent individually with the country's 611 radio stations. This amount is estimated to be in the neighborhood of $50,000,000, so that the total air purchases might approximate $75,000,000. Comparing the amount spent over the networks in 1929 with the amount spent in magazine advertising during the same period ($18,728,971 and $203,776,000, respectively), it will be seen that in 1929 radio network advertising amounted to about 9.1 per cent of magazine advertising. And of the money spent with the networks, N. B. C. received approximately 70 per cent. The broadcasting boy has therefore grown older very rapidly, and the experiment of yesterday has rapidly turned into the industry of today.

Yet at N. B. C., radio apparently remains an enthusiasm rather than a business. It is true that N. B. C. sells as many radio hours as possible. It is also true that N. B. C. does not exist solely to provide the public with

[*Continued on page 114*]

International
RADIO'S GOODWILL AMBASSADOR
Not a wireless man, not an entertainment man, Mr. Aylesworth is radio's roving representative.

The Oyster

Considered economically and gastronomically: his travels, his culinary variations, is three great enemies, and his place as greatest underwater crop.

OYSTERS are things to be eaten during the cooler months, and inside of which ne's children constantly hope to find pearls hich they never discover. This lack, how- ver, does not make of the industry of culti- ating and selling oysters an unprofitable enture. It is probably sufficient to say that ysters form one of the more particular (and munerative) comestibles distributed by the vishly general General Foods Corp. Oysters ntil 1924 were the most valuable of Ameri- n seafoods in annual production. In that ear and since they have been overtaken by e salmon, which has been increasing eadily in value. Oyster production, on the her hand, has declined with equal steadi- ess, from 25,000,000 bushels in 1900 to an timated 17,500,000 for 1930. But simply ecause nature has proved itself incapable of oducing oysters as fast as man can strip em from the bottom.

Thus it is not overproduction that worries e oysterman. The biggest oyster company s only one salesman, and he makes just e selling trip (of two weeks) a year. At one me Chesapeake Bay, the world's greatest ster producing ground, yielded 30,000,000 shels of oysters a year. Today it averages 000,000. How to increase, not how to limit even how to distribute, production is the estion which every oysterman ponders.

Oyster fanciers may not think is a very interesting question. hen one surveys a half dozen ue Points in the half shell, one es not ponder on the problems at confront the oyster industry. or does one think of the huge ound of 7,000,000 bushels of ster shells towering on the ores of the Damariscotta River Maine, a monument not only many an Indian tribal feast t also to the waning fertility of merican oyster beds. Instead e reaches for the horse-radish. here are certain points about e oyster, however, that may ell interest the epicure even in e act of reaching. To tell him that juncture that an oyster asses three quarts of water rough its system every hour ould perhaps annoy him. To dd that an oyster colony the ze of the White House grounds ses ten times as much water per ay as the entire population of e District of Columbia—this would probably infuriate him and would certainly distract him. But there are certain strictly gastronomic quiddities about the oyster of which by no means every epicure is aware and to which each should hearken with interest:

In the first place, oyster fanciers can plan on eating more oysters on the half shell in 1935 than they have in the past twenty years. For this fall's "set," or development of oysters spawned last spring, in the North Atlantic beds (whence come almost all oysters consumed on half shell) is the most abundant in two decades.

Fanciers will have to wait till 1935 because an oyster takes four or five years (in southern waters two) to mature. Even after it passes the five-year mark, its meat remains tender, though its shell grows thick and gnarled. At least one lot of fifteen-year-old oysters has been sent to market.

All Atlantic Coast oysters belong to the same species: Ostrea virginica. Greatest line of distinction is between northern (Cape Cod, Long Island Sound, New Jersey) and southern (Chesapeake Bay and Gulf of Mexico) oysters. The colder waters of the North plus more extensive "farming" of the beds make northern oysters firmer-fleshed, more perfect. Hence they are largely eaten on the half shell while southern oysters are mostly "shucked" out of their shells and sold for cooking. Also, the northern oyster has more of a salt tang about it than have those of the South.

Whether an oyster is a Blue Point or not depends on where it ends its days, not where it begins them. Though an oyster does not move, it often travels hundreds and thousands of miles. Oyster farmers set their crop in one place, mature it in another, and often fatten it in a third. Thus a Blue Point may have been born off Rhode Island and reared in Connecticut before it ends up on Long Island.

The New York State statutes define a Blue Point oyster as one that has been in Great South Bay, Long Island, for not less than sixty days immediately preceding its being offered for sale. Falsely to call oysters "Blue Points" is a misdemeanor.

Cape Cods are larger than Blue Points merely because they are left to grow a year or two longer.

Contrary to popular belief, oysters are edible all year round. They are not palatable in summer months because they are either full of spawn (whence a flat taste) or they have recently spawned (whence thinness and stringiness).

On the Pacific Coast the chief indigenous oyster is the Ostrea lurida, which is found in limited areas of Puget Sound. Though only about the size of a half dollar and rather coppery in taste, its rarity makes it an expensive delicacy.

Pacific coastal waters are too cold to allow oysters to spawn, whence the scanty production. Carloads of Atlantic Coast oysters are shipped out to the Pacific, however, and there planted to grow fat again after their trip across the continent.

Longest wandering of all, however, is the trip many an Atlantic oyster takes to England. Though there are plenty of British oysters, there is logic behind this voyage. The British coastal waters are so chill that American oysters will not spawn there. Hence, planted at Brighton and other watering places, they remain palatable to vacationists all summer long.

When oysters are green, finicky but ignorant diners send them back to the kitchen. This is a major error: the green tinge indicates the presence of copper, which is of the greatest value to the human system.

© *International*

ENGLISHMEN TAKE THEIR OYSTERS SERIOUSLY

Colchester opens the oyster season in style, with the Lord Mayor, the Town Clerk, and the Town Sergeant solemnly gulping down the first catch. Many an American oyster crosses the Atlantic to end its days in British waters.

Hunters and farmers

There are Blue Points, Cape Cods, Lynnhavens, Cotuits. There are also wild oysters and domesticated oysters. In the early days of the industry all oysters were wild, growing in natural beds to be gathered by the first comer. Those were the times of

© Keystone

SALT WITH OYSTERS

the old-style oysterman, one of the most calmly piratical ruffians that ever exploited the country's natural resources. In the closing decades of the last century he flourished, stripping the oyster beds all along the Atlantic Coast. The fabulously prolific beds of Chesapeake Bay were almost wholly destroyed in twenty years by the 800 or 900 dredge boats of the oyster fleet. Despite Maryland's famed "oyster navy," consisting of two big steamboats equipped with twelve-pound howitzers, the stripping went on until the rocks were practically bare of oysters. In 1888 Maryland alone produced 15,000,000 bushels of oysters, which is within 3,000,000 of the entire U. S. production today. Whether or not the depleted beds will regain their old fertility depends on whether oystermen can change their viewpoint from that of hunters to that of farmers. The transition will by no means be easy. Independent fishermen, or "freebaiters," still dredge up oysters by hand from the steadily dwindling oyster beds, while the larger companies operate their farms on land leased from the state. Invariably there is conflict since the freebaiters insist upon taking oysters wherever they find them. In Chesapeake Bay and southern grounds, where farming is still something of an innovation, rifles even have been brought into play. Which is another fact that might well distress an epicure.

Although most of the 65,000 people in the industry still regard the oyster as prey, the minority who look on the oyster as a crop is already accounting for over half the annual production. Biggest oyster farmer, in fact biggest unit in the entire industry, is Bluepoints Co., Inc., a subsidiary of General Foods Corp. Bluepoints Co., Inc. owns 36,000 acres of New England and Long Island farmland, all of it under water. It cultivates this land with dredges and mops—the latter being dragged over the bottom to entangle the spiny starfish, arch-enemy of the oyster. The dredges, which are steam-powered, come into play whenever the oyster is to be raised from his undersea home. Bluepoints Co., Inc., like all the other farmers, disturbs its oysters continually. After being set out on one ground, they are dredged up and transported to another to grow, whence they are dredged up once again and taken to fattening grounds abounding in the microscopic diatoms on which the oyster feeds. Since the oyster farmer cannot see his crop, he must constantly dredge up samples of it to see how it is getting along. All of which makes the life of an oyster under cultivation an uneasy one.

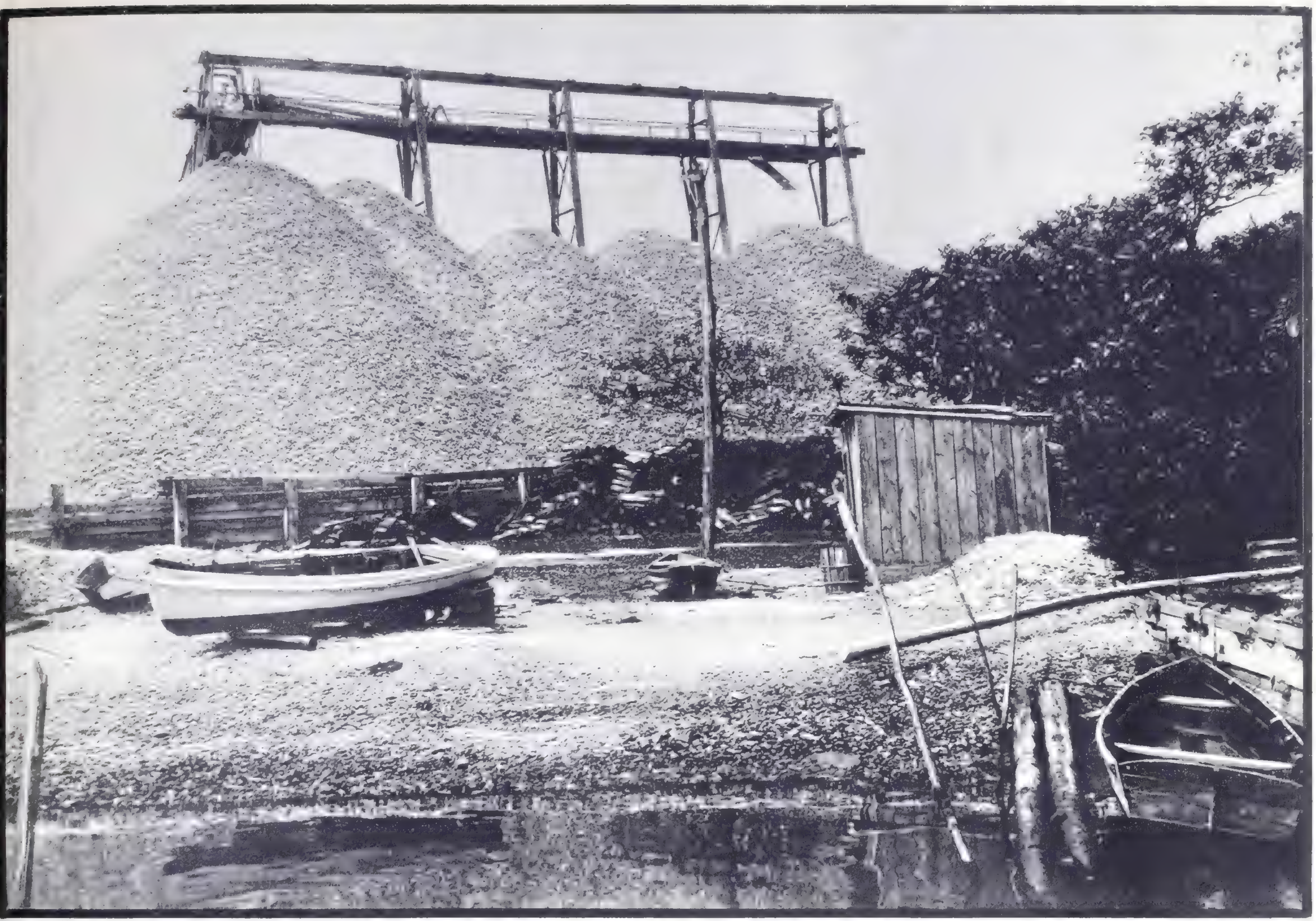
Farming under water is easily as complex and delicate a craft as dry land farming. The crux of the whole process is the set. In the summer the female oyster exudes from 10,000,000 to 60,000,000 microscopic eggs into the water; the male contributes a smaller but vital quantity of sperm. Eggs and sperm come together in the water, form larvæ which float about or lie on the bottom for two weeks. They then attach themselves to some clean hard surface which the farmer has thoughtfully provided. For which purpose old oyster shells, shoveled overboard at the rate of 500 bushels and up per acre, are the most widely used materials. In a few months the set has developed far enough for the farmer to be able to get a fairly accurate idea of what sort of crop he may expect four or five years from then. As in land farming, the weather is the main factor in the oyster crop. Last summer's exceptionally warm and dry weather produced the best set in twenty years on many New England and Long Island oyster grounds. The time the raiser of corn devotes to weeding, the oysterman must spend in mopping up starfish from his grounds. Against two other great enemies of the oyster, he can do little.

Ewing Galloway

Ewing Galloway

BLUEPOINTS CO., GENERAL FOODS SUBSIDIARY AND LARGEST OYSTER COMPANY, IS BOTH SCIENTIST AND FARMER

A dredge filled with oysters comes over the side from the underwater farmlands near Greenport, Long Island (left). At the right is the laboratory at West Sayville, Long Island, whose great jars contain myriads of swimming larvæ. The egg-box affair held by the man on the left is a lime-treated crate to which larvæ attach themselves. After the set, the crate efficiently disintegrates. This is a scientific substitute for the oyster shells illustrated on the following page.



Ewing Galloway

PILES OF OYSTER SHELLS LIKE THESE ARE BY NO MEANS A WASTE PRODUCT. THEY ARE SHOVELED BACK ONTO THE BEDS TO SERVE AS ANCHORAGE FOR A NEW GENERATION OF OYSTERS

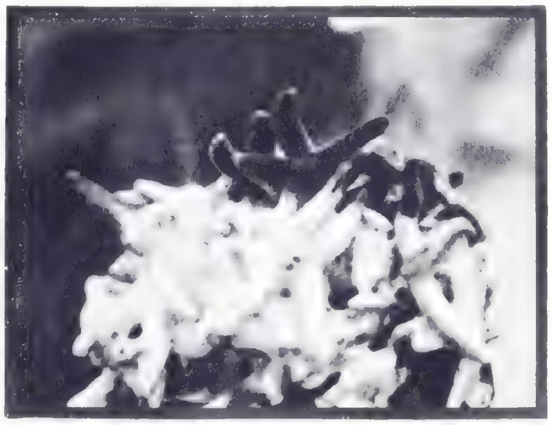
One is the drill, a small periwinkle that makes a neat round hole in the oyster shell and sucks out the meat. The other and most spectacular is the drumfish, which appears in schools on southern oyster grounds and crunches up the oysters, shell and all, in its bony jaws. To a landsman the most difficult part of the oyster farmer's trade is finding the farm. What appears to be a few poles sticking out of the water here and there is to the experienced eye of the oysterman a farm as clearly marked and fully as familiar as the most circumscribed of potato patches.

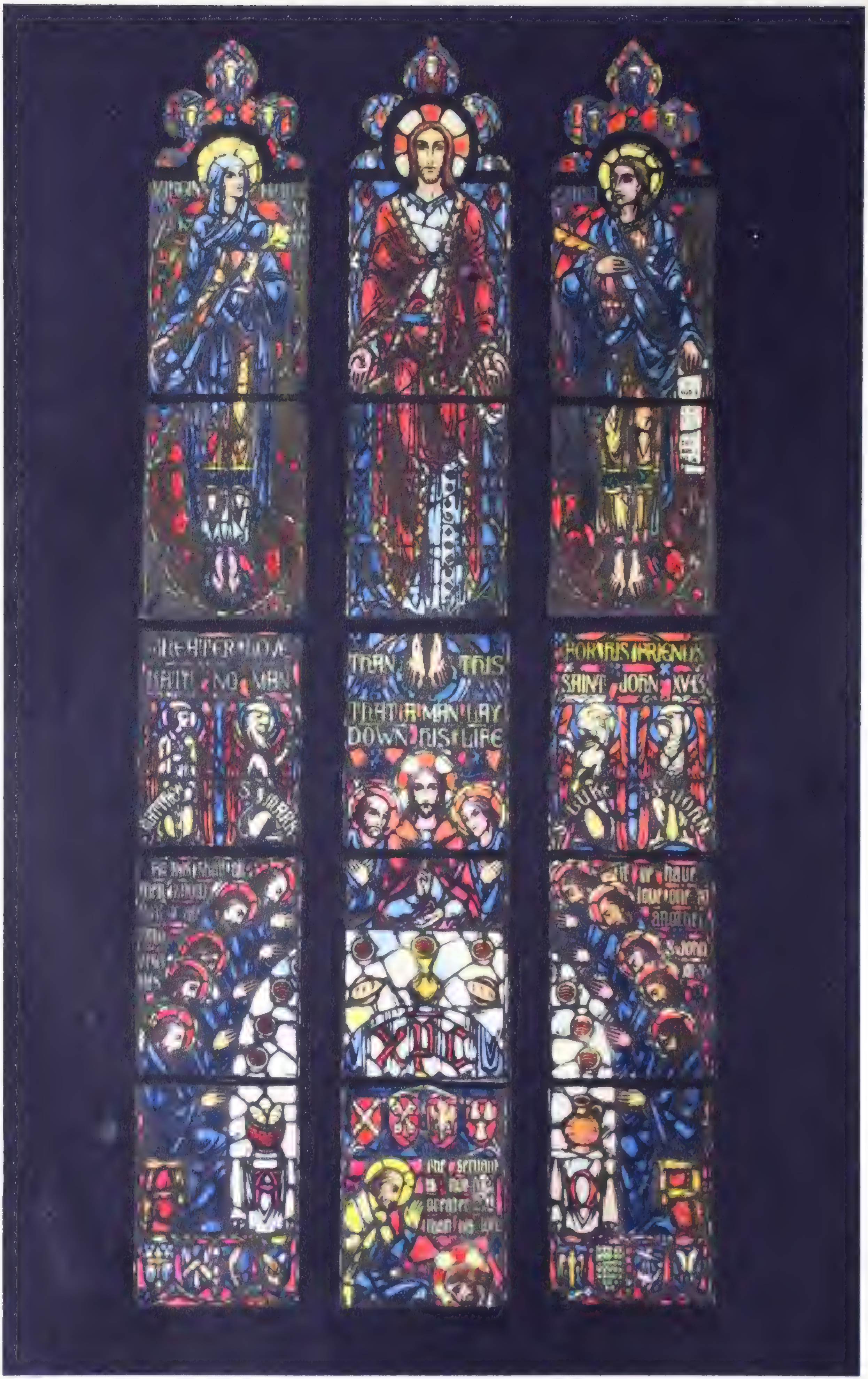
The scale on which the oyster industry now operates may be gauged from the fact that largest Bluepoints Co., Inc. only accounts for 5 per cent of total production. There are other good-sized companies, notably Andrew Radel, of Norwalk, Connecticut, which is second largest. Against such farmers as these, the independent hunter is still making his futile and doomed stand. But it is obvious that the industry's only prosperous future is in cultivation, or, it may be, in something more advanced. A year ago, Bluepoints Co., Inc. served at a banquet some oysters which its scientists had artificially propagated in its laboratory. Perhaps at some distant date the laboratory may succeed the farm even as today the cultivator succeeds the hunter. Oysters may some day grow in Kansas City laboratories. But for the present, at any rate, it is by establishing more and more farms that the industry will show that it has not neglected to garner from experience its few pearls of wisdom.

Fortune—Macdonald

AN OYSTER FARMER AND THE WEEDS THAT GROW ON HIS FARM

Captain Jim Seymour, who runs General Foods' 1,000-acre oyster farm at Northport, Long Island, has been cultivating Northport oysters since 1886. He can open an oyster as dextrously as any chef, can tell at a glance whether it is too green, too thin, or too watery. Like every oyster farmer, Captain Jim has one main chore: weeding starfish. Yarn mops are dragged over the beds, entangling the "sea stars." Since each of a sea star's five points can grow four others on occasion, scalding with live steam is the only sure method of ending this pirate's destructive career. To the right, some well-steamed starfish.





GREATER LOVE
HATH NO MAN
THAN THIS
THAT A MAN LAY
DOWN HIS LIFE
FOR HIS FRIENDS
SAINT JOHN XV 13
LUKE
JOHN

Courtesy of Charles J. Connick

THE LAST SUPPER, A PORTION OF CHARLES J. CONNICK'S GREAT EAST WINDOW IN THE CHANCEL OF PRINCETON UNIVERSITY CHAPEL

Modern Stained Glass

Is responsible for an American Sainte Chapelle at Valley Forge. The Last Supper, according to Mr. Connick; Mr. Bonawit's conceits; and other brittle achievements. Their sum total is a considerable industry and a notable American art.

THERE would be little excuse for writing about modern stained glass if it did not compare with the glass of other centuries. Yet it is a prevailing superstition that the medieval art of stained glass was lost shortly after the guildsmen removed their scaffolds from Chartres Cathedral. This is not so. Better would it be to say that the art was misplaced. For if the 17th and 18th centuries preferred pallid, pictorial glasswork to the trembling, radiant symbolism of the Dark Ages, that was a matter of taste and not technique. And if the 19th century conceived of stained glass merely as translucent painting, that was not due to the loss of any ancient and superior formula. The landed Mid-Victorian who installed an insipid glass likeness of Lancelot in the parlor, between his collection of conch shells and his signed photograph of President Garfield, was acting according to the accepted esthetic tenets of his time. All of which is by way of saying that stained glass is as much a matter of attitude as of method and that the scarcity of medieval-type stained glass in modern times is due not so much to the ignorance of medieval chemistry as to the absence of the medieval appreciation of dynamic, splendid color.

Today, however, the U. S. contains several glass craftsmen whose outlook and procedure are inspired by the early centuries, whose results are very definitely comparable to the wonders of Chartres and Sainte Chapelle. Furthermore, the finest efflorescence of this Old World art is currently to be observed in the New World. In the light of this country's riches, this does not seem in the least paradoxical. It takes money to make good glass and money to buy it. American money is doing both, but the steadily growing quantity of good glass in this country has as yet little general appreciation. Partly this is due to the public's lack of information as to the criteria by which glass is judged.

In general, there are three ways in which a stained glass window may be produced. In recent centuries, as we have already hinted, the usual practice has been to paint a design on glass, subsequently fusing the paint into the surface. In this way some very pretty pictures have been produced. Sir Joshua Reynolds depicted a quartet of dainty maidens in New College, Oxford, which may be regarded by medievalists as a vitreous atrocity, but which undoubtedly caused the elegant artist to puff out his sateened chest.

In America the opalescent glass school, using a semi-opaque glass of marble-like texture, arose in the seventies when John La Farge tried to reproduce the effect of sunlight through a wet soap dish. The most famous opalescent windows are Mr. La Farge's own, such as those at Harvard and Trinity Church, Boston. The movement was furthered by Louis Tiffany and a host of less gifted men. The vapid, sentimental glass work of the latter may be found in churches all over the country; we shall devote no more time to it here.

What makes the medievalist shudder when he considers the glass-painting and opalescent methods is the simple fact that they neglect the peculiar value which sets glass apart from any other medium. That value is color. It is the color possibilities of stained glass which have excited the rhapsodies of Gothicists from Viollet-le-Duc to Henry Adams. It is the color possibilities of stained glass which make it possible for Oswald Spengler to liken the interiors of the great Gothic cathedrals to lonely, twilit forests. And it is the color possibilities of stained glass which have been misplaced for several centuries.

The opalescent method precludes realizing the full color value of stained glass just as effectually as a coat of whitewash would conceal the sumptuous texture of velvet. A painted design fused into the surface of glass is practically colorless compared with the medieval tonality. The only way to get the medieval tones is by the medieval method—the use of clear full-colored glass—glass in which the color is not fused into the surface but permeates the entire substance. The result is a manifold brilliancy—smouldering or cool, concentrated or diffuse. What it may mean to a sensitive witness is perhaps best suggested in Proust's celebrated description of the church at Combray: "There was one among them which was a tall panel composed of a hundred little rectangular windows, of blue principally, like a great game of patience of the kind planned to beguile King Charles VI; but, either because a ray of sunlight had gleamed through it or because my own shifting vision had drawn across the window, whose colors died away and were rekindled by turns, a rare and transient fire—the next instant it had taken on all the iridescence of a peacock's tail, then

VALLEY FORGE

Nicola D'Ascenzo's George Washington panel in the Memorial Chapel, which has been called the American Sainte Chapelle.

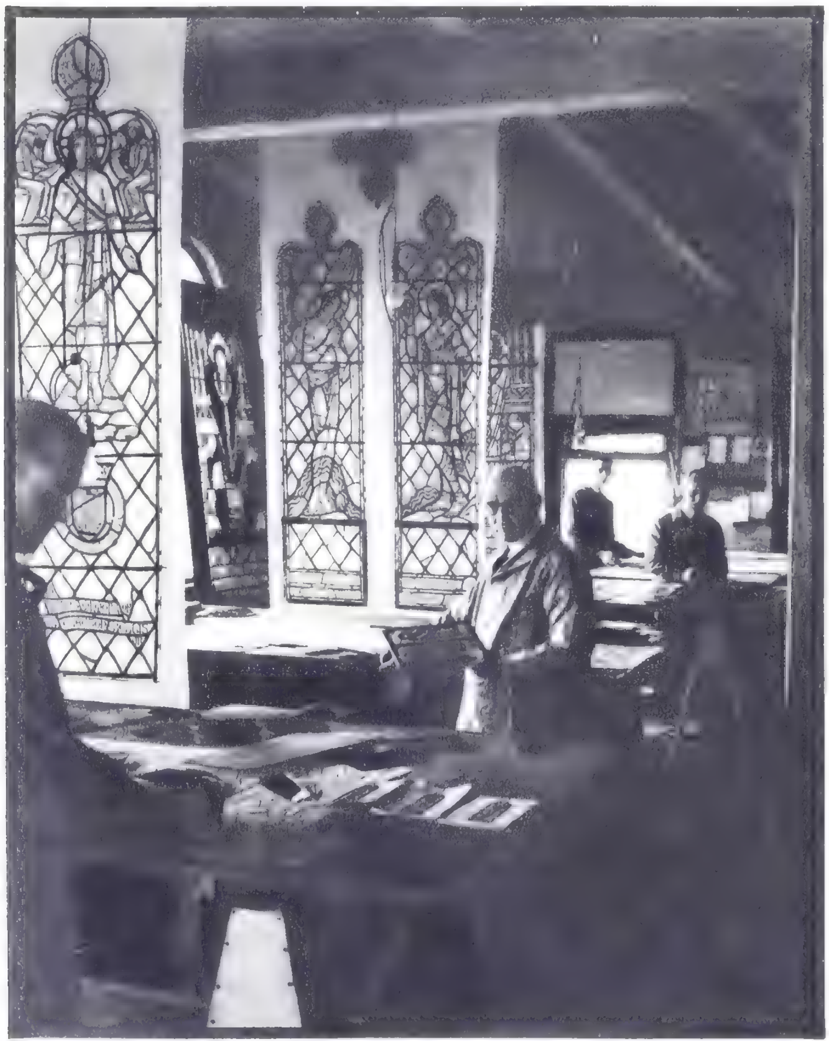
shook and wavered in a flaming and fantastic shower, distilled and dropping from the groin of the dark and rocky vault down the moist walls . . . a moment later the little lozenge windows had put on the deep transparence, the unbreakable hardness of sapphires clustered on some enormous breastplate . . ." It is this shining filtration of light, varying with every change of weather or the position of the onlooker, which makes it impossible to represent stained glass in reproduction. It is no exaggeration to say that the pictures on these pages do less justice to their originals than would reproductions of any other plastic art.

A renewed appreciation of color, then, is chiefly responsible for the recent revival of the medieval method after years of a watery, lantern-slide species of glass work. And let it be emphasized here that such experts as Nicola D'Ascenzo of Philadelphia and Charles J. Connick of Boston are able to fashion full-color glass windows in the manner of the Middle Ages.

The second great factor in the medieval method is design, which is regarded, in essence, to be the pleasant disposition of color. The medieval glass-worker, instead of painting pictures on glass, built up his pictures, in the mosaic manner, out of innumerable small pieces of full-colored glass. He was thus prevented from being as fluid and pictorial as his glass-painting successors, but if the exigencies of his method caused his work to be relatively rude, it is no less true that this rudeness possessed a decorative vigor, a luminous pungency, which his descendants, with all their paint pots and frothy fantasies, could never obtain. To the medievally-minded glass-worker, there can be but one choice between the effete Virgins of painted glass and the incandescent, jewel-like figures of the full-color period. Because his process prevented him from too intricate figure work, the medievalist dealt extensively in the simpler language of symbolism. Particularly in the so-called "grisaille" glass did the design frequently omit figures altogether, relying on patterns, vegetable and geometric.

Obviously the medieval and subsequent methods can be combined. Indeed, a certain amount of painting (details of faces, etc.) is to be found in medieval glass, particularly that which is meant to be viewed at close range where the painted colors will register with the full-color glass. And even the most inveterate glass-painters and opalescent craftsmen frequently employed full-color glass for background tones. But this partial intermixture of methods need not confuse anyone. In general, the divergence between the styles is absolute, immediately apparent.

Consider now some of the difficulties which confront the glass craftsman. First there are the creative problems of color and design, as weighty and intangible as in oil painting. Affecting these is the fact that glass colors are juxtaposed in their full intensity with no possibility of mixing and toning such as the painter in pigments always enjoys. But the popular conception that a glass-worker's palette is limited is not true. Violets, the last colors to be made available, were obtained in the 16th century. The predominance of blue in early glass, to say nothing of its spatial, ethereal suggestions, was due to its wonderful power of radiation. Modern glass men recognize this, as well as blue's virtue in the balancing of other colors. Then, too, the craftsman must consider position, the way in which light will strike his window at each hour of the day. Subtle is the partnership between glass, sun, and sky. Again we quote Proust, in a curious statement which any stained glass student will immediately recognize as valid: "Its windows were never so brilliant as on days when the sun scarcely shone, so that if it was dull outside you might be certain of fine weather in church." It is literally true that the color of the skies differs between Paris, for instance, and New York, and the sky's blue, or lack of it, profoundly affects the tonality of stained glass. In France, glass must be designed to look best on the gray



Photos Courtesy of Charles J. Connick

THE CUTTING ROOM

The glass-cutter is guided by a cartoon of the window—an actual-sized, detailed drawing which is cut up to indicate the exact shape of the individual pieces.

THE ASSEMBLY ROOM

In a vasty studio the window is assembled for study. The glass is tied together with grooved strips of lead and reinforced with a pattern of iron rods.

. C. Rose

ABOVE—THE PRINCETON CHAPEL. BELOW—RALPH ADAMS CRAM

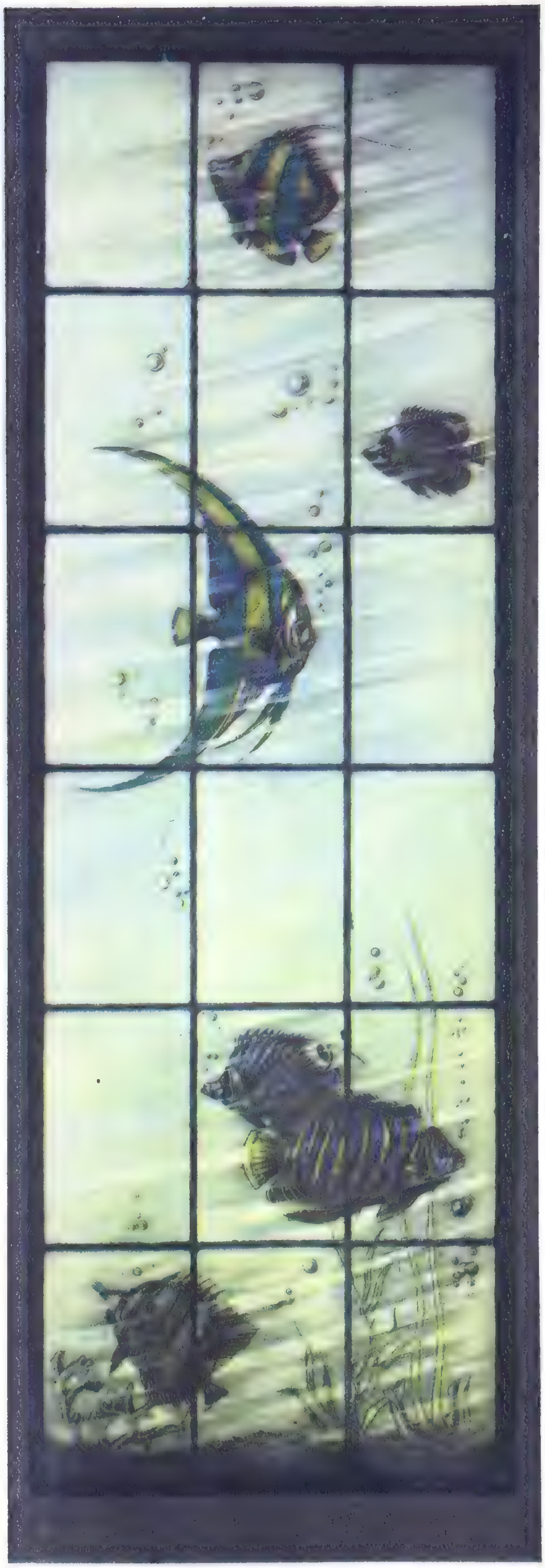
BELLIGERENT GOTHICIST, PATRON OF GLASS—CRAM

Keystone

IN SOME of its most glorious manifestations, Gothic architecture seems to be primarily a frame and setting for stained glass. Obviously, the Gothic style is a great deal more than that, but it remains true that he Gothic and its glass are inseparable. Thus t is quite natural to find that one of the greatst benefactors of American glass craftsmen s the leading Gothic architect of the U. S., Ralph Adams Cram of Boston, a native of New Hampshire, now in his sixty-eighth year.

Before the War the names of three great partnerships dominated any discussion of American architecture—McKim, Mead & White; Carrere & Hastings; and Cram, Goodhue & Ferguson. The first two firms were noted for a conscientious, brilliant Classicism, the last for its devotion to the Gothic. Of the eight men represented in the names of these firms, Mr. Cram alone survives. The American architectural scene is hanging; the age of steel and reinforced concrete has bred new styles, and new names have arisen as their exponents—Raymond Hood, Holabird & Root, Arthur L. Harmon, Ely Jacques Kahn, Ralph Walker.

In this time of experiment and the excited formulation of new doctrines, Mr. Cram remains the patient, scholarly Gothicist. He does so by conviction, not that of the bloodless pedant, but that of the intense, almost belligerent zealot. Essentially, Mr. Cram's architecture may be accounted for by the fact that he is a Christian. He believes in the past, present, and future of Christianity and the great Christian architecture. A happy corollary for the crafts is his enthusiastic search for the best in stone, metal, wood, and glass work. And since the designers of medieval-type glass, more than any other craftsmen, have dealt in an unfamiliar art, they have been particularly benefited by Mr. Cram's weighty patronage.



FISH
In a Manhattan residence may be observed an aquarium in glass, the work of G. Owen Bonawit, who specializes in secular subjects.

days, which there predominate; American glass must be attuned to brilliant sunlight, yet also adjusted to overcast skies. Mr. D'Ascenzo's clerestory window in St. Thomas's was designed so that when a neighboring skyscraper eventually cuts off much of its light, the tints will be enrichened.

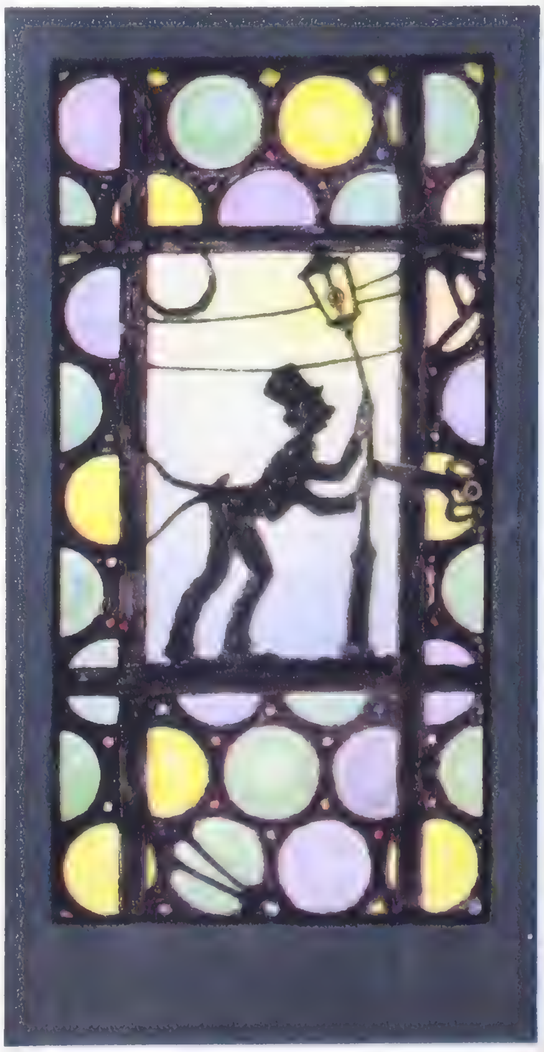
Position also affects the design. A window may be sixty feet above or away from the point of observation, in which case its figures must be rendered in suitably large scale. On the other hand, a window viewed from a distance of three feet suffers from coarseness of treatment. There are numerous tricks of glass to be studied; some colors spread, others contract. For this reason, it is often necessary to distort the drawing of a window if it is to seem natural at a distance, and the same design would have to be altered in drawing if the color scheme were to be transferred. All these and many other allied effects must be visualized by the craftsman before his window is put in place, for it is only rarely that reworking is financially feasible. As for the observer, it is necessary to remember that the full beauty of stained glass is no more apparent at the first glance than is the full significance of any teeming subject. Experts estimate that, from a purely optical viewpoint, the eye requires from half to three-quarters of an hour to adjust to a stained glass window. Certainly if the sleepy Princetonians, attending morning chapel, were to fix their eyes on Mr. Connick's Great East Window, they would see a great deal more at the end of the service than they had at the beginning.

Throughout this discussion we must repeatedly mention the two men who are generally conceded to be the leaders of their craft. Nicola D'Ascenzo of Philadelphia is a quiet, businesslike, and tactful descendant of an Italian family of armorers. Among his many gifts is an uncanny ability to convince opinionated churchwomen that the magenta they had so much fancied in the church around the corner is unsuited to their own needs. Professionally, perhaps, his greatest distinction is his honorary membership in the American Institute of Architects, the highest architectural body in the country, whose roster represents the pick of the profession. His election was a tribute to his contributions to American art through stained glass. This honor has been conferred on only one other glass craftsman—Mr. Connick. Mr. D'Ascenzo is, however, the only glass man who has won the Native Industrial Art Medal of the Architectural League of New York (for a 13th century window in St. James's Episcopal Church of Bristol, Pennsylvania).

He avoids the slavish imitation of medieval windows, but when he was asked to repair a 12th century roundel for the Philadelphia Museum, he made a copy so exact that the director found great difficulty in telling it from the original. The museum subsequently appointed D'Ascenzo curator of stained glass. He has also been a regular lecturer at the Metropolitan Museum of Art.

He was the first man in America to make full-color windows of the 13th century type. Noted as a colorist, he excels in tying his windows into the architectural fabric by means of sympathetic color and design. The theory that stained glass should be a lustrous adjunct of architecture and not an independent entity is shared by all the best glass-workers.

Born in Torricella, D'Ascenzo came to Philadelphia at the age of eight. He abandoned portrait painting professionally because he was bothered by the caprices of his clients. In the practice of ecclesiastical decoration, he was



SOUSE
A Bonawit vignette from the residence of Sam Katz, theatrical magnate, in Centenary, New York.

annoyed by changes which light from other men's windows wrought in his murals. This impelled him to undertake glass work. In the beginning, he was naturally compelled to do the type of work he did not advocate. He is now financially independent and famous enough to do as he likes, even to work without profit, as was the case at Valley Forge. A great admirer of 13-15th century work, he nonetheless defies the strict archæological attitude which would force him to make bloodless, anæmic saints. D'Ascenzo saints unfailingly suggest that health accompanies piety. He has invented a glass in which the design is raised as well as colored, admitting almost full daylight but concealing any such public eyesore as a Tom Thumb golf course. Since stained glass usually appears gray and monotonous when the church is lighted from within, he has executed windows which reveal a pattern of gilded leads and subdued color under direct interior lighting. This pattern is quite different than the appearance of the window in transmitted daylight and is far more satisfying than the common stunt of artificial lighting behind the glass.

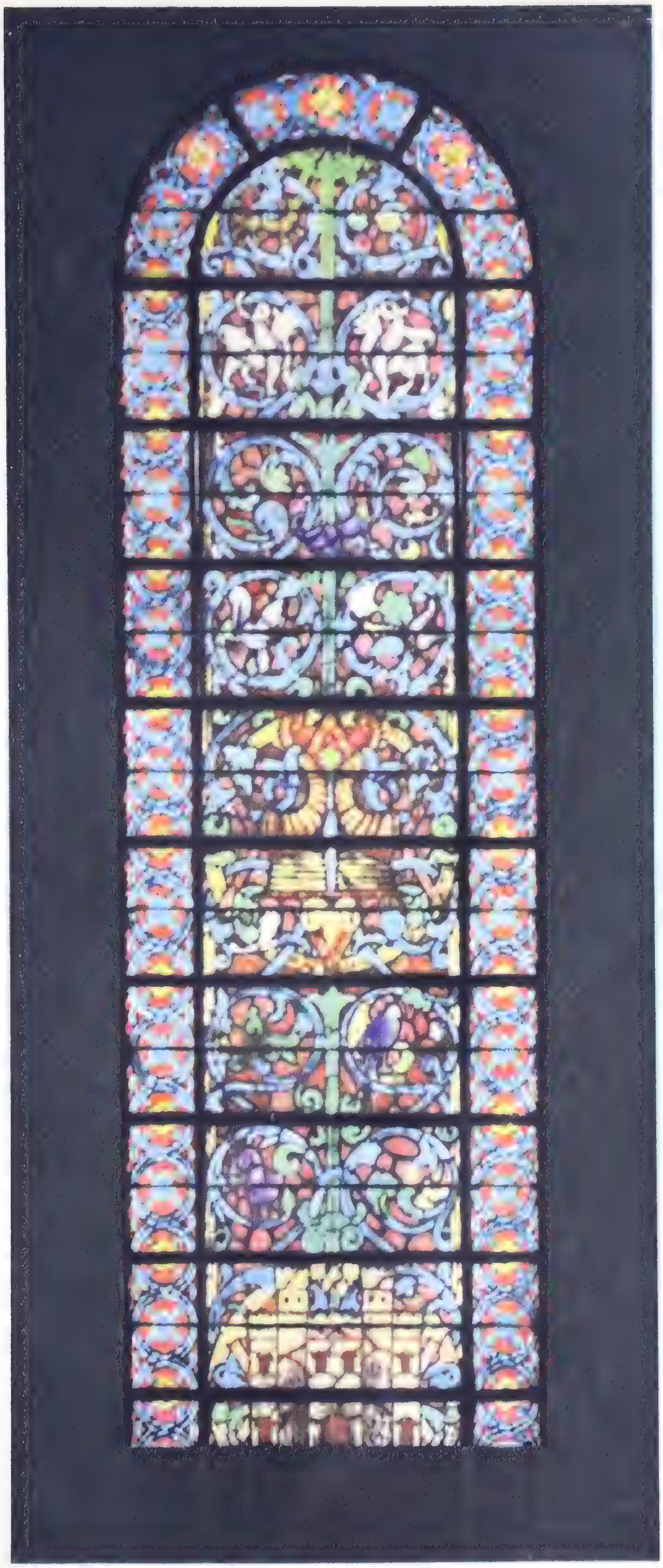
The D'Ascenzo studio is run on a profit-sharing basis; the craftsmen, among whom is Nicola D'Ascenzo Jr., bring their banjos, mandolins, and violins to the studio for impromptu concerts at noon and at the end of the day. The boss is one of the best fiddlers of the lot. He is also an adept etcher and paints in water color and oils at his summer home at Folly Cove Point, Massachusetts. For some time D'Ascenzo Jr. has been occupied with the problem of fusing gold nto glass, a process long known only to German craftsmen. Having perfected it, he recently designed a golden glass mosaic for Mrs. Cyrus H. K. Curtis. It may be seen in the Unitarian Church of Germantown, Pennsylvania, as part of a decorative scheme including a chancel window by D'Ascenzo Sr., donated by Mrs. Curtis in memory of her daughter, Eleanor Pillsbury Pennell.

Because Mr. D'Ascenzo's studio is located in Philadelphia, the environs of that city form a notable hunting ground for stained glass. A sumptuous rose window by Mr. D'Ascenzo may be seen in the Church of the Holy Child and several fine secular pieces in the Fidelity Trust Company. Another secular achievement of which both the management and the craftsman are proud is Mr. D'Ascenzo's floral glass for various Horn & Hardart automats throughout Philadelphia. Perhaps the finest D'Ascenzos of all, however, may be found in the Memorial Chapel at Valley Forge—the magnificent historical medallions, red for Martha Washington, blue for George. Due largely to these extraordinary productions, this national shrine has been called the American Sainte Chapelle: not even a raucous schoolgirl who sometimes guides visitors around the chapel can detract from Mr. D'Ascenzo's achievement. No student of stained glass should neglect the few examples of his work to be found in New York. St. Thomas's Church, one of the most admired architectural works of the late Bertram G. Goodhue, contains one brilliantly imperious piece of glasswork by Nicola D'Ascenzo: a clerestory window. His glass in the chapel of the new Riverside Church (Rockefeller and Fosdick) is also of the first order.

Mr. Connick of Boston

Charles J. Connick of Boston has been developing the traditions of medieval glass for thirty years. The influential Ralph Adams Cram was among the first to appreciate his talent. Born in Springboro, Pennsylvania, fifty-five years ago, Mr. Connick left Pittsburgh High School to draw for a local newspaper. The chalk plate engraving system then used required a technique not unlike etching, which emphasized for young Connick the necessity for expressive line—an invaluable aid in stained glass work. He studied glass and took art courses in Pittsburgh, visited the great European churches, and opened his present studio in 1913. He is the only glass man to hold the American Institute of Architects Craftsmanship Medal.

A tireless lecturer and author, Mr. Connick is noted for the symbolical rather than realistic treatment of his subjects. His "Doughboy," for instance, is not a literal depiction of a member of the A. E. F., but a stylized design in color based upon the doughboy theme. He believes the modern school of painting—Matisse, Picasso, and Braque—in educating the public to appreciate symbolism, should greatly advantage the glass-worker. When asked to copy the clerestory windows of Chartres for the Riverside Church, he

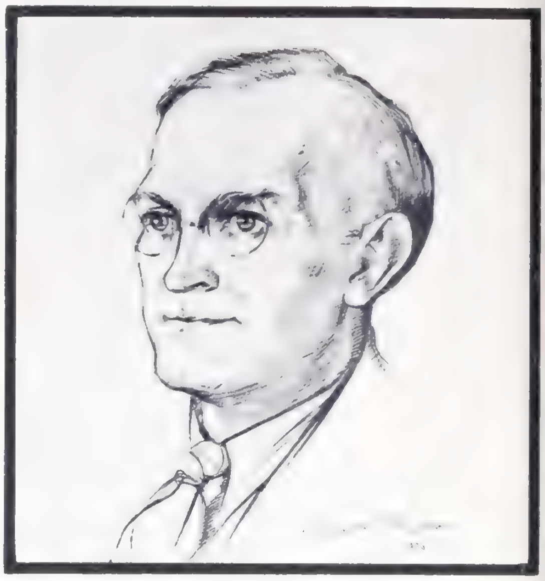


TEMPLE EMANU-EL

New York's new synagogue contains a symposium of glass which, in accordance with Mosaic law, is devoid of living figures. Above, a D'Ascenzo window.

NICOLA D'ASCENZO
Master craftsman of Philadelphia, medalist of the Architectural League. In his Memorial Chapel windows, George Washington still winters at Valley Forge.

G. OWEN BONAWIT
New York's specialist in the secular moods of glass, historical, zoölogical, facetious. He has never visited Europe; his sources and subjects are American.


CHARLES J. CONNICK
Leader of the Boston school, veteran of a thirty years' war to reëstablish the medieval type of stained glass, originator of the striking "Connick blue."

absolutely refused and requested to be allowed to submit a sample of new work in the old manner. This he did, offering a section six feet square with instructions that it be examined at a distance of seventy feet. These instructions were ignored; the intended effect was naturally not appreciable at close hand, and Mr. Connick's services were not engaged. Now permanently installed at the top of a long staircase in the Chicago Art Institute, the rejected Connick sample offers those who pass up or down a fine lesson in the changes which glass reveals in "performance." French importations were used for the Riverside Church with results which many experts consider lurid and illegible. Presumably the French glass men did not comprehend the brilliancy of American atmospheric conditions.

A Connick gallery

New York, which contains so surprisingly few pieces of fine glass, has an excellent example by Mr. Connick, the one outstanding window in the enormous, incomplete Cathedral of St. John the Divine. It stands in the chancel of the little Chapel of St. Martin of Tours and far outshines the larger, more elaborate windows in the cathedral proper. A further instance of his art may be seen in St. Agatha's church in Philadelphia, and for conclusive evidence of his craftsmanship the student should seek Princeton University, which has in its chapel not only an exquisite piece of Gothic architecture from the drafting boards of Ralph Adams Cram, but also the finest symposium of glass in any American university. At opposite ends of this lacy edifice are two great windows, Mr. Connick's to the east, Mr. D'Ascenzo's to the west, both in the grand scale and the grand style. Eventually Mr. Connick will also be represented by four epic windows, symbolizing the *Divine Comedy*, the *Morte d'Arthur*, *Pilgrim's Progress*, and *Paradise Lost*.

Austerity may be the most frequent mood for stained glass, but it is by no means the only one. Nor is it necessary to have the ecclesiastical subject and the antique temper. G. Owen Bonawit, a New Yorker in his early thirties, deals in modern manners and subjects and avoids church contracts as he would the deadly tarantula. Specializing in graceful conceits rendered in light color (no color at all to one of Mr. D'Ascenzo's or Mr. Connick's viewpoint), his golden fish and parrots illumine the house of the late Edward Bok at Lake Wales, Florida. He has designed a veritable nautical museum in glass for the Cunard Building in New York. The great Sterling Library and Harkness Quadrangle at Yale are full of his scholarly and collegiate vignettes, and Sam Katz, theatrical *entrepreneur* (Paramount Publix Corp.) had Mr. Bonawit execute a glass souse for the door of the Katz private bar at Centenary, New York. Mr. Bonawit has never been to Europe, but he scours American paleontology and archæology for subjects. His interest in stained glass was first aroused by his uncle, the late Owen Bowen of Heinigke & Bowen, stained glass makers (now Heinigke & Smith). Other stained glass makers who incline more and more to the medieval style are Wilbur Herbert Burnham of Boston, Reynolds, Francis & Rohnstock of Boston, and Oliver Smith, of Bryn Athyn, Pennsylvania.

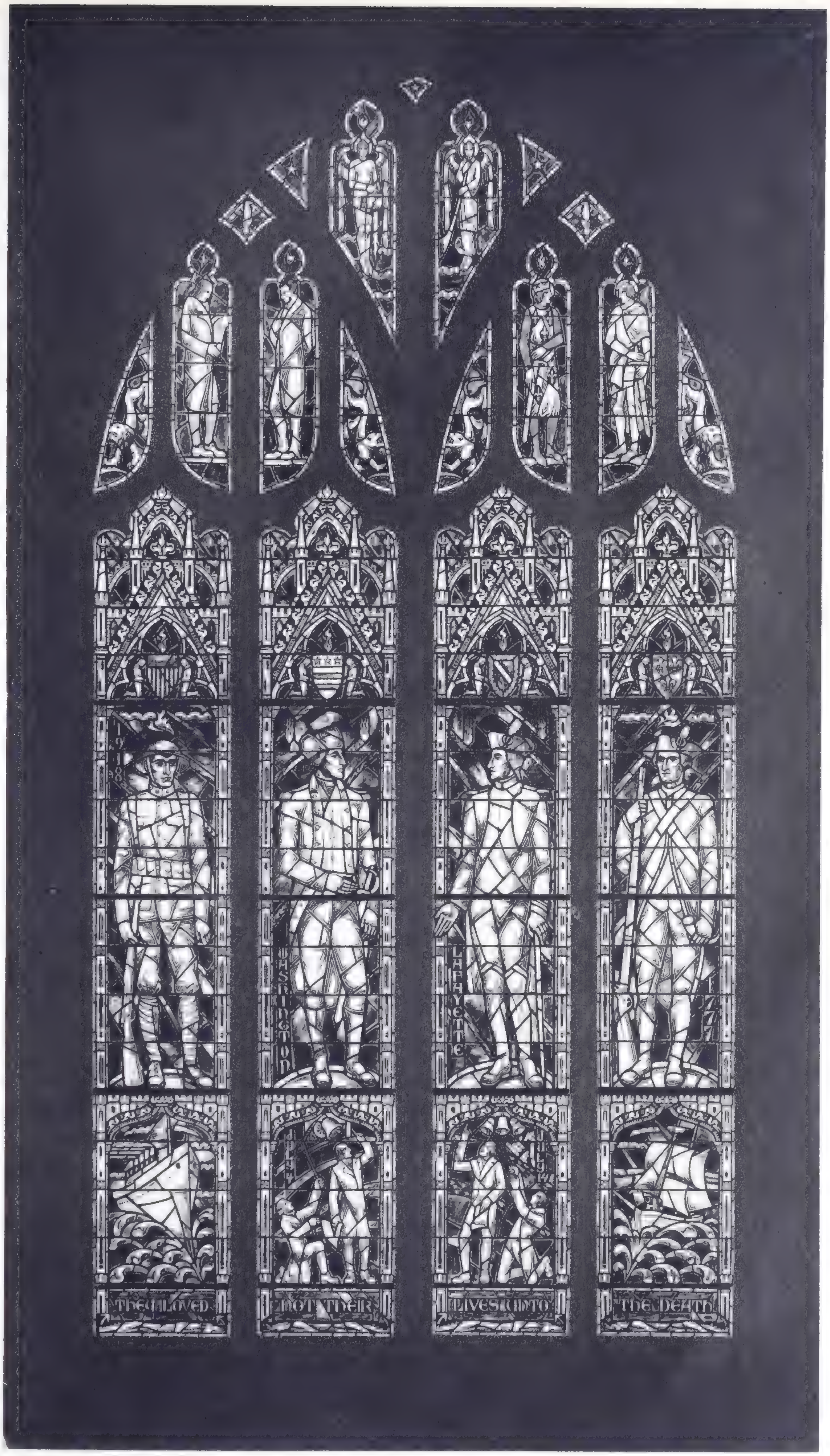
Cartoon and kiln

The mechanical-chemical processes whereby a stained glass window is made are substantially the same today as they were in the Middle Ages, although gas and electric kilns and soldering irons have replaced the old charcoal fires, and the craftsman may buy ready-made leads in various shapes and sizes instead of moulding them himself. As ever, the procedure is a matter for a master craftsman and skillful assistants; there should be no suggestion of factory methods. When the client and architect have approved scale sketches in water color, a cartoon is prepared. This is a line drawing the actual size of the proposed window. It indicates the exact shapes and sizes of the individual pieces of glass and assigns a number to each of them. A similar cartoon is cut up like a picture puzzle, the resulting pieces of paper being attached with beeswax to a plate glass easel with spaces left for the leading.

A glazier then removes the pieces of paper one by one, selects glass of the color indicated by the color sketch, cuts it according to the paper shape, and affixes it with beeswax in its proper place on the glass easel. Diamond-edged cutting instruments are a 15th century invention; they obtain a smoothness, a nicety of outline which the earlier method of scoring with red-hot irons and breaking along the scoring lines did not permit. Thus the date of disputed glass may sometimes be determined by an examination of the glass edges.

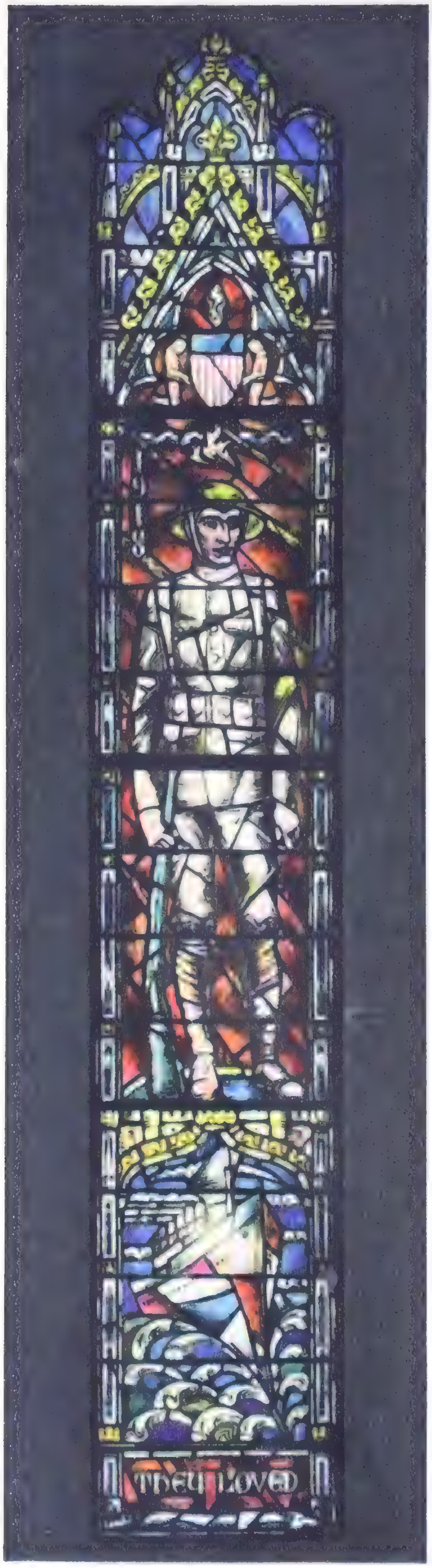
Painting, leading

When the glass has been cut and the colors approved, such painting as seems desirable is begun. Flesh tints, drapery details, decorative patterns, and whatnot are painted with a pigment consisting of a powdered glass flux mixed with metallic oxides and sulphides of iron, magnesium, cobalt, or copper to supply the opaque coloring matter. When more light is desired through a given spot, the paint may be stippled or wiped out. The painted glass is laid on trays covered with plaster of Paris and heated to "a bright cherry red," in the stained glass jargon, or 1150 to 1250 degrees Fahrenheit. The pigment is fused into the glass and becomes part of it as the melting point of the flux is at least 500 degrees lower than that of the glass on which it is used. Slow heating and cooling are important, otherwise the glass


1918
WASHINGTON
LAFAYETTE
1777
THEY LOVED
NOT THEIR
LIVES UNTO
THE DEATH

Courtesy of Charles J. Connick

MR. CONNICK'S WINDOW COMMEMORATING THE AMERICAN EXPEDITIONARY FORCES IN THE AMERICAN CHURCH AT PARIS



Courtesy of Charles J. Connick

DOUGHBOY

A detail from Mr. Connick's A. E. F. window, which appears on the preceding page.

becomes extremely brittle and would be likely to crack under wind pressure. The modern craftsman may fire and refire the back of his glass with a pigment until the surface imperfections have absorbed the color, and the patine deposited by centuries of dust and wind and rain has been simulated. The individual pieces of glass are then leaded together, cemented to prevent leakage, and the whole fabric braced with a decorative pattern of iron rods as a precaution against the pressures of the weather. Then occurs the testing of the window in light, an exciting process for the craftsman. Seeing his entire work sun-smitten for the first time, he can "tune" and balance his colors, making such final changes as he deems necessary.

There are some 400 stained glass studios in the U. S. Last year they produced $3,000,000 worth of work as against $500,000 worth of importations. The best American glass is generally believed to surpass the best that Europe can offer. This opinion was echoed by Bishop William T. Manning, after a recent tour of Europe, when he announced that the glass for the Cathedral of St. John the Divine, hitherto largely English, would hereafter be made in America. The comparison between the garish English glass in the apse and Mr. Connick's windows in the Chapel of St. Martin of Tours is so obvious as to need no comment. And yet the English are our chief competitors in high-quality glass. The French trend is too modernistic to lend itself to ecclesiastical purposes, which absorb most of our stained glass, and Germany's distinctive contribution apart from more modernism, is cheap glass, especially in stock colors and designs, which may be observed in many American memorials to the dead of the World War.

Glass value

Manifestly, it is just as difficult to generalize about stained glass values as about those of painting or sculpture. Sometimes in the case of great areas it is convenient to fix prices on a footage basis. In this case, the best American glass commands $45 to $75 per square foot. But it is a more frequent procedure for the craftsman to set his price as might a landscape artist or a sculptor. Many feel with Mr. D'Ascenzo that the best results are obtained when the client gives the craftsman an allowance and the latter, knowing exactly where he stands, makes the best window possible for the sum in hand.

Since the general may sometimes be glimpsed through the specific, we may say that Mr. D'Ascenzo's thirty-foot clerestory window for St. Thomas's, a work of the highest grade, cost from $20,000 to $30,000, and Mr. Connick's Great East Window at Princeton, from $30,000 to $40,000. The tariff laws do little to protect the glass craftsman. Whereas the Hawley-Smoot bill raised the duty to 60 per cent, ecclesiastical windows valued at $15 or more per square foot are admitted duty free.

ITINERARY FOR THE STUDENT OF MODERN AMERICAN STAINED GLASS

Outstanding examples of modern American stained glass are confined to no one part of the country. The diligent connoisseur will make these visits:

In *New York City*, the new Riverside Church, St. Thomas's, the Central Presbyterian Church, and the Temple Emanu-El have fine examples of Nicola D'Ascenzo's work; the Chapel of St. Martin of Tours in the Cathedral of St. John the Divine and St. Vincent Ferrer's have Charles J. Connick's work; and the Riverside Church, work by Wilbur Burnham. Mercersburg Academy, *Mercersburg, Pennsylvania*, also has noteworthy glass by both Connick and D'Ascenzo.

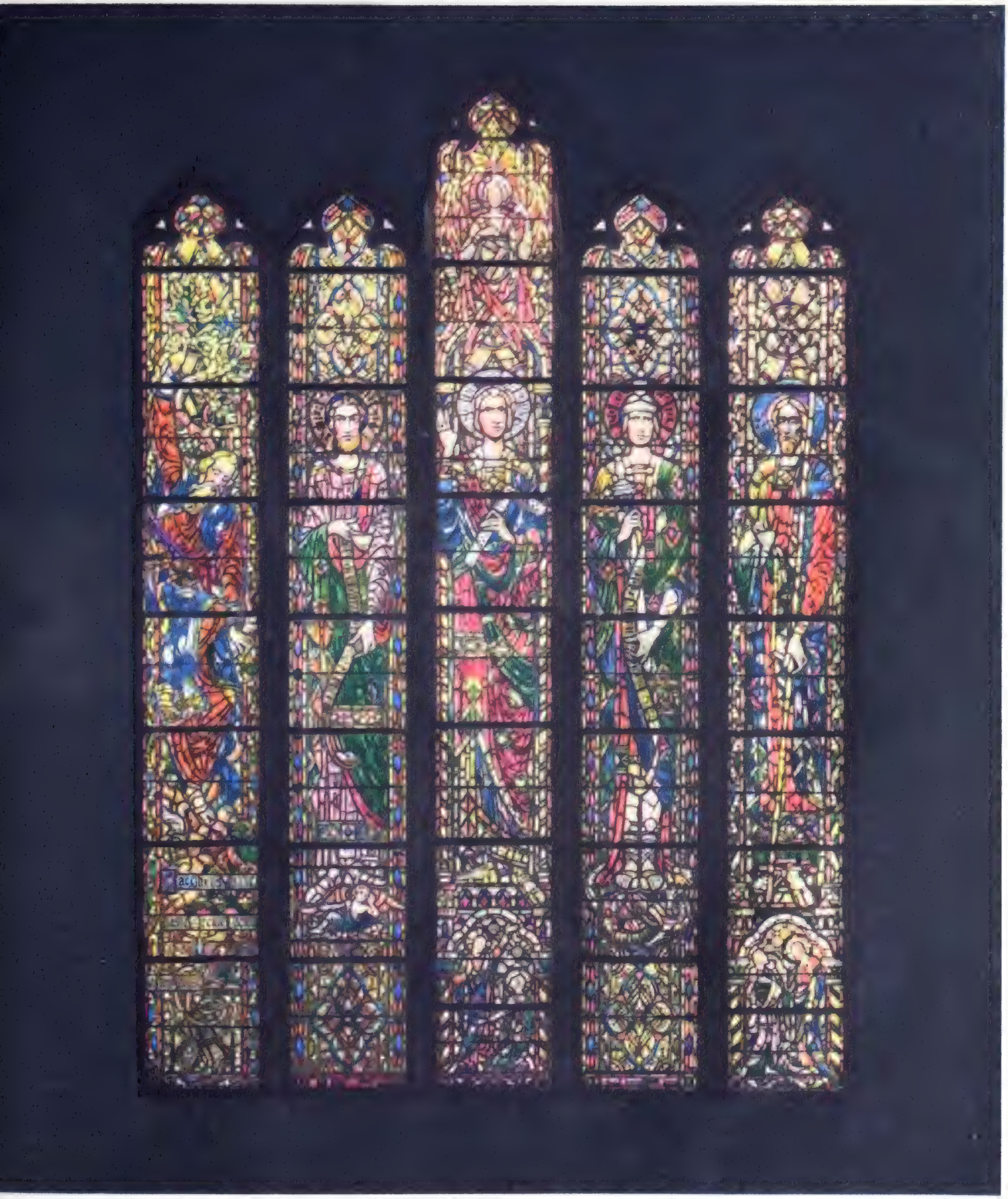
At *Princeton University*, the Memorial Chapel has two great windows, by D'Ascenzo and Connick. At *Valley Forge* are D'Ascenzo's Washington medallions, at *Bristol, Pennsylvania*, his Episcopal Church windows.

In *Philadelphia*, important work has been done by D'Ascenzo for the Church of the Holy Child and the Fidelity Trust Company. Excellent Connick glass can be seen in Philadelphia at St. Agatha's.

Yale University, in New Haven, has embellished its Harkness Memorial Quadrangle and Sterling Memorial Library with G. Owen Bonawit's vignettes in stained glass, while Sam Katz has made use of Bonawit's art for his *Centenary, New York*, home.

At *Chicago*, the Fourth Presbyterian Church and St. Paul's have some beautiful Connick glass. *San Francisco* is proud of Connick's work in Grace Cathedral and in St. Dominick's. At *Los Angeles* are the fine Burnham windows of St. Vincent de Paul's.

But the ranking American glass men, confident of their own superiority, are practically impervious to foreign rivalry. They have other and more urgent cares. No one who has not undertaken to fill a stained glass contract can appreciate what havoc a vestryman and particularly a vestryman's wife can wreak with the artist's projects. It is the vicious plight of the decorative artist that he must convince those who support his labors that what they want is not necessarily what they ought to have nor what they themselves would like after it was executed. And the human indisposition to be convinced by argument is reflected in the damage, via bad stained glass, already apparent in some of the country's most notable churches. But even these esthetic *faux pas* have their value: already the Connick, D'Ascenzo, and other splendid windows are truly shining by contrast. Impressions are slowly being made which are certain to speed the revival of the misplaced art. There may be those who will object to glass saints in these days of failing creeds, but few will deny that, saints or no saints, the medieval art of stained glass is an infinitely potential heritage to the modern world.



A SECTION OF NICOLA D'ASCENZO'S CLERESTORY WINDOW IN ST. THOMAS'S CHURCH, NEW YORK CITY

Skyscrapers: Prophecy in Steel

FORTUNE brings to an end its inquiry into the most spectacular of industry's instruments. An answer to critics and a glance to the future. Tomorrow's city, beautiful from ocean and air. Governments shall determine what the man in the street will see.

FORTUNE'S skyscraper, begun (in print) five months ago, is now (in print) completed. The land has been assembled, the financing arranged, the architects, engineers, and builder employed, the executive staff set up, the plans and specifications prepared, the materials purchased, the site cleared, the foundations driven, the steel erected, the framework sheathed, the elevators installed, and the space (hypothetically) sold. Five months is not an excessive time for the construction of a skyscraper even in print. But one of the greatest of New York's towers was built in steel in eleven.

It remains to examine the completed object. There is still considerable doubt in the minds of the critics whether these monsters are benign or malevolent, whether they are about to inherit the earth or to perish from natural inappropriateness like the great elk of Ireland, whether they should be permitted to breed or should be at once exterminated. There is also speculation as to the changes which adaptation to environment may impose upon them if they continue to exist.

FORTUNE therefore concludes this series with a glance toward the future. There has been much crystal-gazing, palm-reading, prognostication, theomancy, divination by birds, divination by entrails, by dregs of tea, by mice, by red-hot iron, and by plain, old-fashioned hope and fear. FORTUNE will attempt to prophesy by steel and stone.

• • •

SIX or seven years ago architects in England, reacting to the general post-War literary excitement about the skyscrapers of New York, discussed the possibility of such buildings for London. It was never, presumably, a very serious discussion. The Royal Institute of British Architects responded, in the words of a commentator, "most sensibly" to a paper picturing the lamentable consequences of skyscraper construction in America—the congestion, the subways, the crowded streets, the ugliness—and the Institute passed on to more pressing matters.

Subsequently one of the many apologists-abroad with whom America is so plentifully blessed contributed an article to a London architectural journal commending the Institute for its perspicacity and good sense. The following matter is extracted from that article. It is characteristic counter-skyscraper propaganda.

"The exciting cause of the high building was the discovery, during the 'eighties, that the ground rent of a plot increased in value in proportion to the height of the building erected thereon.

". . . one must judge the achievements of the high building from the base rather than from the pinnacle, and from this point of view it is neither a social, an economic nor an esthetic success.

"As for the effect upon the life of the community that has been caused by the congestion of the workers in great lofts and offices during the day, and in dismal distant dormitories at night, the waste of energy, time, and human strength . . .

". . . New York is rapidly approaching the point where, as in Imperial Rome, vehicular traffic will be prohibited from its principal streets during the day; where, in spite of numerous man-sewers, called subways, which have been provided for the plebeians, the transportation system will be no longer adequate to its daily load.

"If new enterprises must find a place in London, it is much simpler to provide for the steady exodus of the older industries to garden cities and villages . . ."

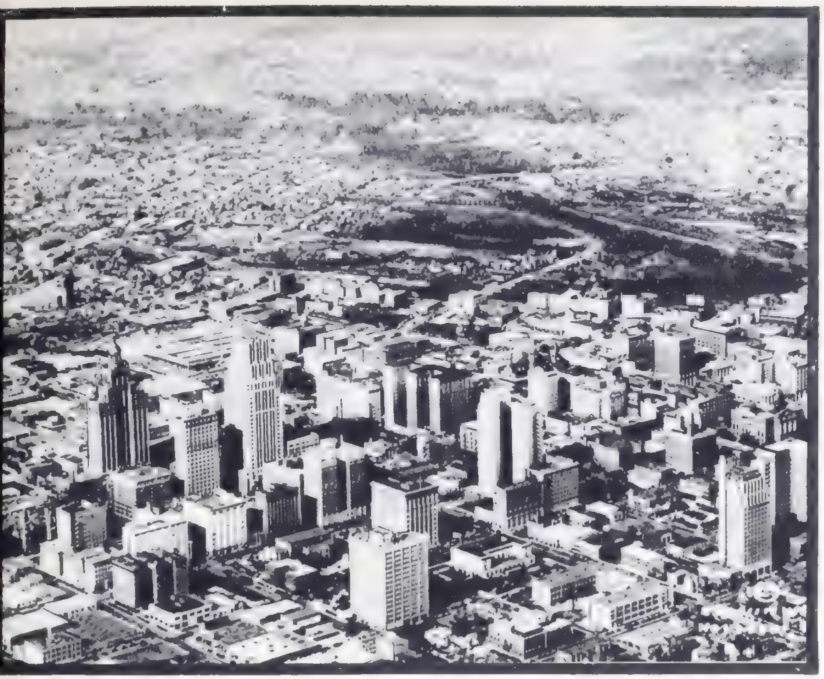
Such is, in general, the case against the high buildings: that they are the product of greed; that they are not beautiful (or that, even if they are beautiful, they stand in such clumps that you can't see the trees for the wood); that they are responsible for the remoteness of a man's home from his office and the difficulties of transportation in between; that those difficulties of transportation (due, as always, to the skyscraper) are such that shortly street traffic will cease and will be replaced by tunnels and viaducts to be paid for by the taxpayers, etc. (This particular thesis is, of course, carried out to its logical conclusion: that the skyscrapers are responsible for the failure of the school system because the money which ought to go into new schools is sunk in new subways to carry the blood supply to and from these unnatural hearts.)

The emotional basis of the attack is plain enough. The propagandist confuses the skyscraper with the modern city. He does not like the modern city (an attitude in which he is certainly justified). And he chooses for blame its most conspicuous feature. Certain African tribes, following the same line of reasoning, attribute drought to the secret defects of their kings, and it is notorious that hard times invariably are the fault of the government in power. The difficulty is that the same drought sometimes extends over nations having other kings. Boston is a city in which the building height is, with few exceptions, limited to twelve stories. And the only difference between Park Street Under at six o'clock in the afternoon and Times Square Subway Station at the same hour is in the names. The office workers live as far out or farther. And if a Huntington Avenue surface car is preferable to a Broadway Express it must be because the Bostonians are sweeter to wrestle with than the inhabitants of Riverside Drive. Even the architects of London, critical of the social effects of the skyscraper

METAL WALLS

A description of the metals used to sheathe modern skyscrapers is rendered difficult by the confusion of trade names. *Nirosta, Enduro, Rezistal, Allegheny Metal, Defistain, Duraloy, Nickel Steel 18 & 8, Lesco 18 & 8, Stainless N and Stainless U, U. S. S. Chromium,* etc. look very different in print. They do not look so different to metallurgists. Their history is this: prior to the War, experimentation was under way in England and Germany to find a gun lining which would resist corrosion and erosion. The result in England was a high-chromium, non-ductile alloy now known to commerce as *Stainless Steel*. It is useless to the builder. The result in Germany was chrome nickel steel, an alloy of iron with 18 per cent chromium and 8 per cent nickel. Chrome nickel *is* ductile and *can* be used in building. During the War the Krupp patents protecting this alloy were seized by the U. S. They were sold to the Chemical Foundation. The Chemical Foundation licensed, and still licenses, the manufacture of the alloy under the seized Krupp patents, and *Allegheny Metal* is the product manufactured under such license (and under patents of its own) by the Allegheny Steel Company. It is used on the Empire State Building. But the Krupps were not dead. After the War they took out American patents on certain heat treatments in connection with the manufacture of the alloy. The result they called *Krupp Austenitic Number 2* (*KA 2*). They then licensed American companies to manufacture by this process and to use the name of *Nirosta* to designate products so licensed. Central Alloy Steel Corporation is one of the licensees. Under the *Nirosta* patents and the original Krupp patents (for use of which it still pays the Chemical Foundation) it manufactures *Enduro KA 2*. This metal was used on the Chrysler Building and on the Empire State. Other licensees under the *Nirosta* patents are Crucible Steel Company of America (*Rezistal*), Ludlum Steel Company, The Babcock & Wilcox Tube Co., etc.

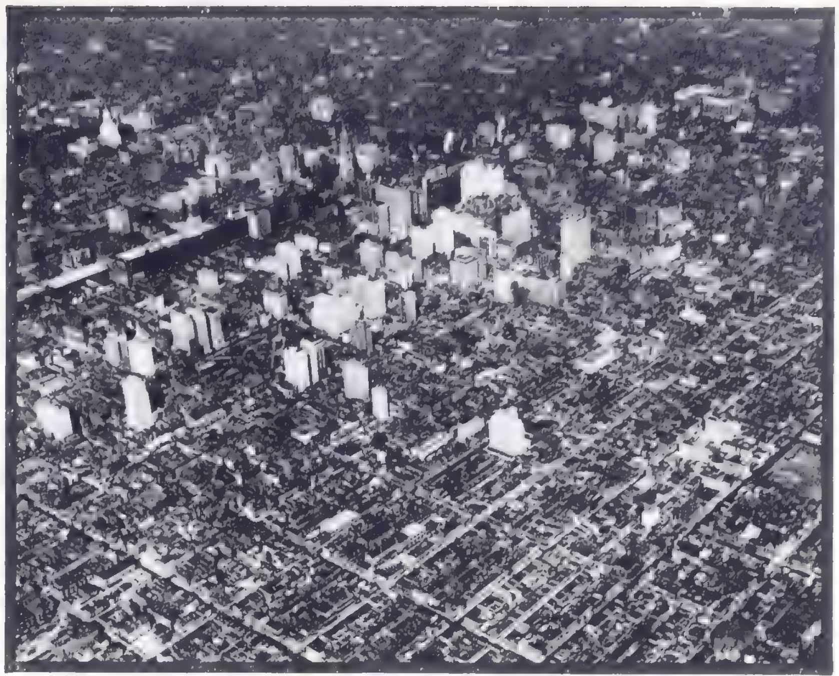
These alloys, like all other metals, only give the maximum resistance to corrosion after the surface has been freed of oxides and other impurities. This is usually done by polishing. After polishing, the surface can be changed by various processes so that it no longer has a high polish, without affecting the corrosion-resistance. Thus the metal surface of the Empire State Building has a flat, "Tampico-brush" finish which, leaving the surface polished, destroys its brilliance, and this surface is expected to stand up for the probable life of the building.



nternational

HOUSTON

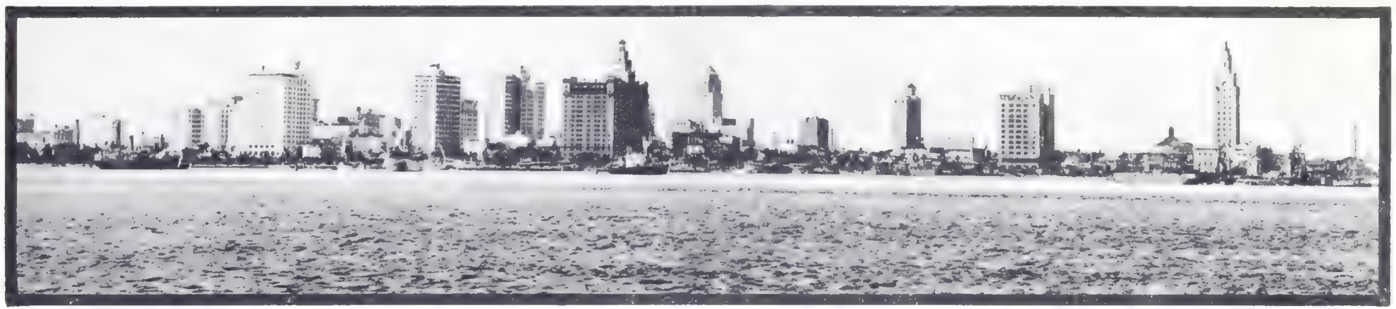
Sudden tall needles on a flat plain, best-known Houston buildings are the Niels sperson, Post-Dispatch, Second National Bank, the Petroleum.



Fairchild Aerial Surveys, Inc.

PHILADELPHIA

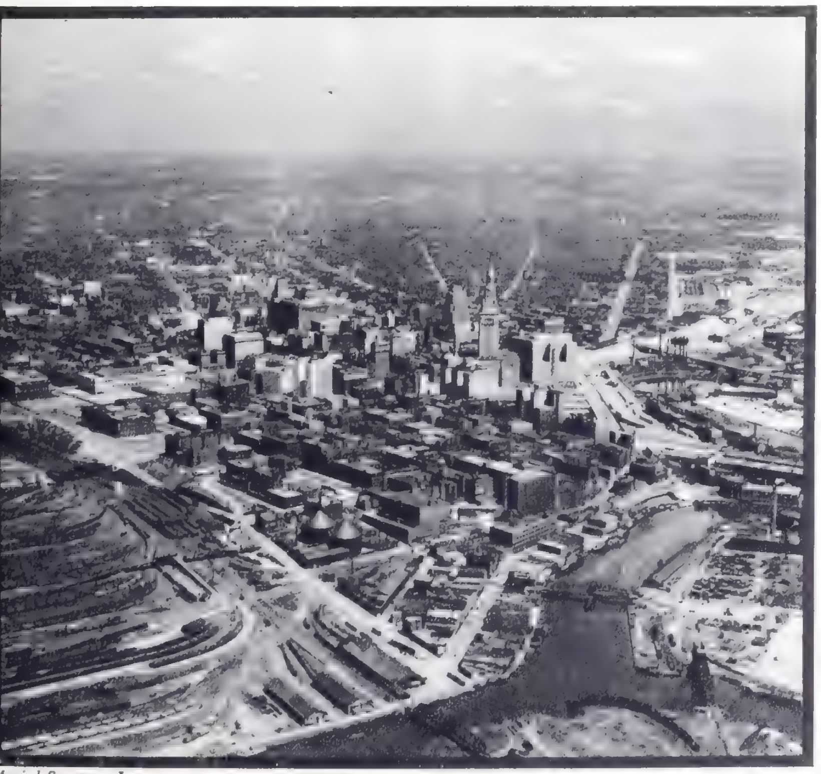
Philadelphia is third in number of tall buildings (New York is first, Chicago second). Highest Philadelphians: the Drake and the Lewis.



International

MIAMI

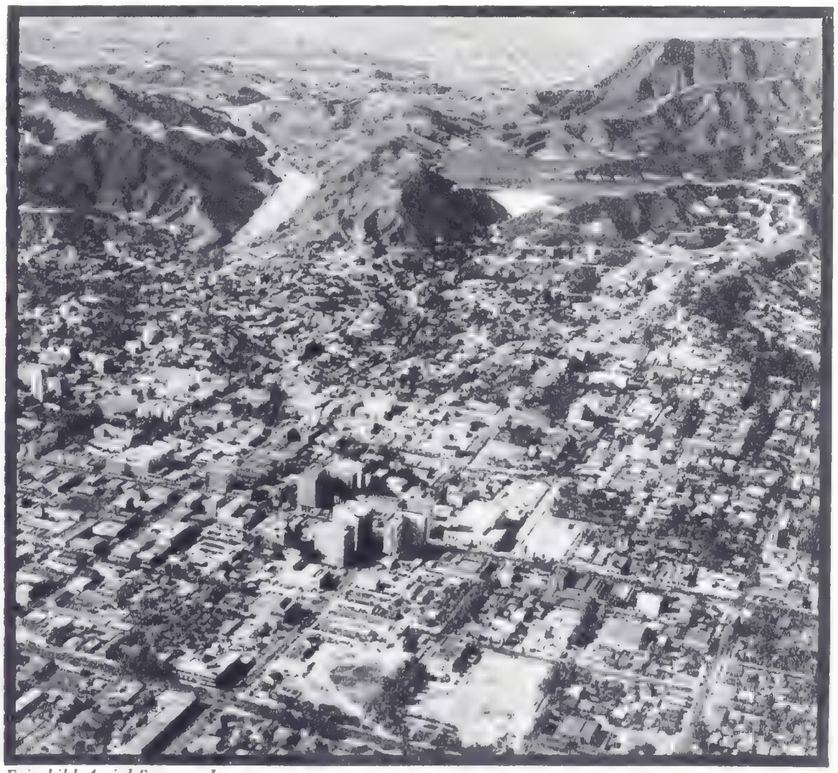
Among the most favored of American winter resorts is Miami, whose not unimpressive skyline has been contributed almost entirely by its waterfront hotels. Landmarks are its City Hall and its Ingraham Building and its Daily News Building. Undaunted by the winds and waves that swept its shores and homes away in 1926, Miami with confidence has continued to build. And with every other city in the U. S., it has not eschewed skyscrapers.



erial Surveys, Inc.

CLEVELAND

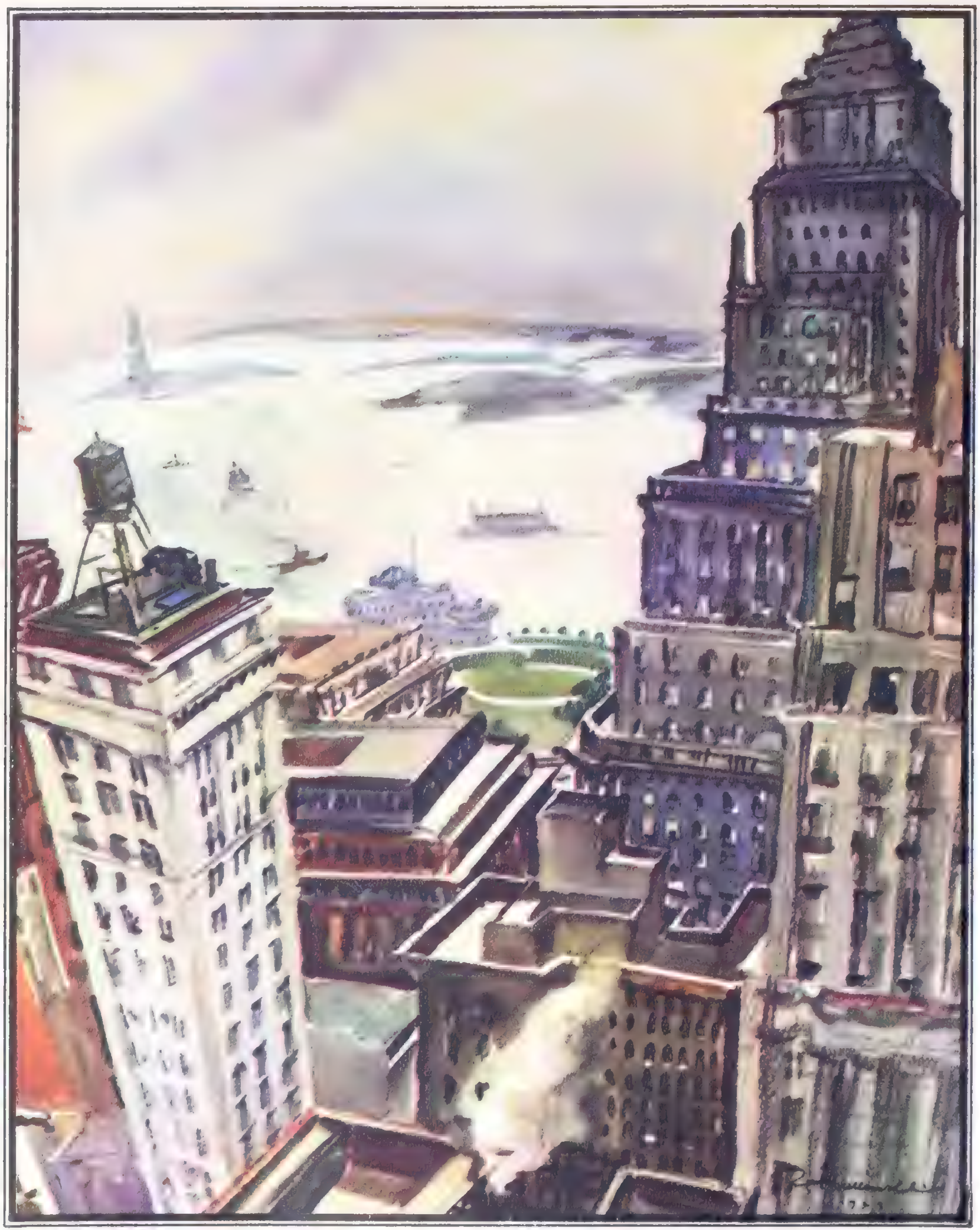
Those two devoted brothers, Oris P. and Mantis J. Van Sweringen, gave to Cleveland ts tallest Terminal Tower, whose fifty-two stories rise 708 feet. Dwarfed (but not into bscurity) are the Ohio Bell Telephone Building (356 feet) and the Union Trust (260 feet).



Fairchild Aerial Surveys, Inc.

HOLLYWOOD

Hollywood is incorporated in Los Angeles where one may only build to a height of approximately 150 feet (however, by very popular vote, the City Hall was allowed to run up to 438 feet). Above, the far-famed Egyptian and Chinese theatres of Mr. Sid Grauman.



Courtesy Ferargil Galleries

MANHATTAN IMPRESSION—*BY ROBERT HALLOWELL*

To the right the Standard Oil Building, to the left the little known Norton Lilly Building. A New York artist depicts a corner of lower Manhattan now rivaled in height and fame by the skyscrapers of the Forty-second Street district.

as they may be, know something of congestion. And Paris, that paradise of the low-roof school, has read as much about the difficulties of *circulation* in the last five years as any city on earth. As for Imperial Rome, if wheeled traffic was indeed excluded from its streets during the day, it was hardly because of the crowds pouring down from the third and fourth stories to get lunch.

But the emotional basis of an argument and its reasoning are (or ought to be) two different things. You can forgive a man who lives in continuous pain, or even in continuous discomfort, for wanting a scapegoat. But he mustn't put it that way if he wishes to persuade his contemporaries. He must not, for example, say that the skyscraper owes its origin to pure acquisitiveness—to "the discovery, during the eighties, that the ground rent of a plot increased in value in proportion to the height of the building erected thereon." For one thing the statement is not discreet. And for another, it is exceedingly foolish. There never was any such discovery. A landlord who did not know that his rent increased as he increased his rentals would not have survived even in the seventies or the sixties or the year 1. What landlords *did* discover (and long before 1880) was that an increase in the size of a building would not increase their rent-rolls unless there were a demand for the space.

In other words the exciting cause of the high buildings lies much deeper than the acquisitiveness of landlords. It is to be found in the sudden and pressing demand of a great many people to rent offices in the same street. It occurred, if you will, in the eighties or thereabouts. But the landlords did not induce it. On the contrary. It was the consequence of a change in the structure of American commercial life. Prior to that time the only people who had much use for offices in the business districts were lawyers, notaries, consuls, a few brokers, and so forth. Manufacturers had their offices at their plants and communicated with their customers and their bankers by letter. The relation between the various industries and financial agencies was remote, rigid, occasional, and patterned on the then English model. Wall Street was a center of interest, not a center of control. What happened toward the end of the century was that attempts were made to organize and relate the various units of business either perpendicularly by industries (the "Trusts") or horizontally by common ownership and control ("The Robber Barons," "Wall Street," etc., etc.). The attempts were successful and the association between businessmen and their lawyers, manufacturers and their banks, merchants and their creditors, became so close and so continuous that neither letters nor the telegraph nor even the new-fangled telephone were competent to handle it. When the Colorado Bonanza Company was owned and run as he pleased by the Old Man, an office at Cripple Creek and a couple of trips a year to New York were all that anybody could ask for. But when the Colorado Bonanza Company was owned by the people who bought its stock on the New York Stock Exchange and run by a board of directors who were, for the most part, bankers and lawyers in New York, the company could not function without New York agents and a New York office.

Fortunately for the field marshals and war lords of the industrial age, the demand for space in the financial centers coincided (as social changes frequently do coincide with engineering developments) with the successful use of structural steel in the erection of tall buildings. If a great many people want to live in the same street within a distance of a few blocks, there is no way of satisfying their desire but to install them in tiers, one on top of the other. And the Home Insurance Building and the Tacoma Building in Chicago, built in the late eighties, showed how that could be done.

The first skyscrapers, that is to say, were thrown up by the centripetal force of the industrial age. They were tools of industry. They are still tools of industry. And so long as the development of American industry is toward greater and greater centralization, they will be needed and will be built.

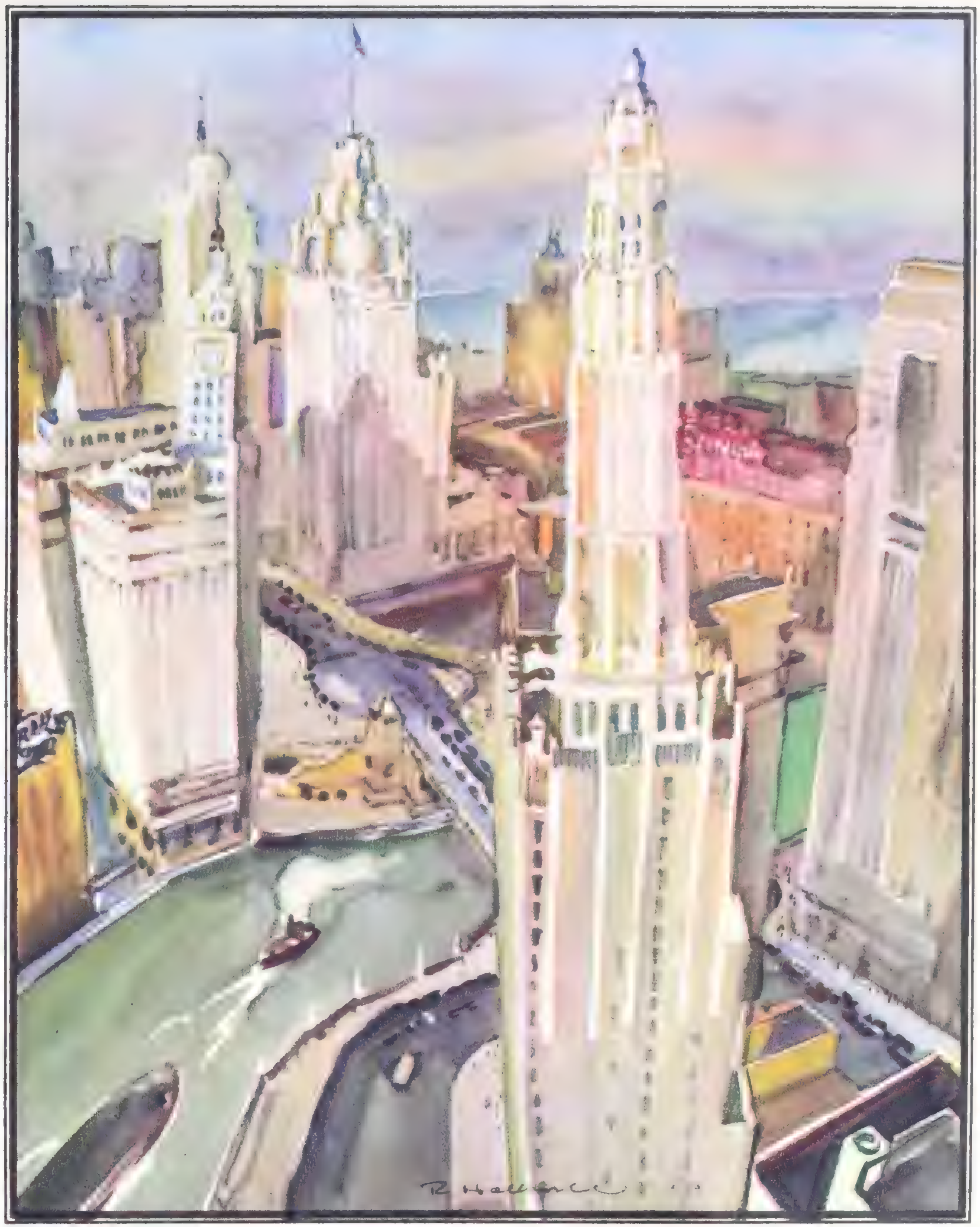
The whole vice in the attack on the skyscraper rises from the failure to perceive that the skyscraper is not, in its pure form, a building like another but an instrument of commerce. If it were merely an architectural innovation, the fact that it cuts off sunlight and concentrates large populations would be an adequate reason for legislating it out of existence. If the steamboat were merely another ship, its smoke and its tendency to occasionally submerge several thousand people at once would make a strong case against it. So even more strongly of the railroad train, which certainly adds nothing to the peace and security or beauty of life. Most, if not all, the instruments of modern industry detract in some way from the pleasantness of existence. But they are to be judged, so long as the industrial age continues, by their efficacy as instruments. It is arguable that the whole industrial development of the last fifty years is, humanly speaking, a mistake. But it is unsound to load the whole onus of that argument upon the beams and columns of one only of industry's tools.

It does not follow that the tool has always been used for the purposes for which it was developed. Any more than the roaring automobiles of an Indiana Saturday night are exercising their functions as agencies of transportation. There are avenues in Los Angeles where skyscrapers stand alone and remote from the present center of the city like four-poster beds in a cow pasture, and there are skyscraper nucleuses in Texas towns which have no justification in fact. As well as residential skyscrapers in New York which are mere luxuries for the very rich. Such structures are certainly an abuse. But also they are explicable enough. It is the common fate of all successful architectural innovations that the solution of a practical problem becomes in time an esthetic expression altogether divorced from the problem solved. The history of Gothic architecture is the great example. In the case of the skyscraper, the height which was necessary for administrative concentration in congested areas has become important in and for itself. And skyscrapers are built in Texas for no other reason than that their arrogance and exaggeration and pride correspond to some obscure requirement of the time and place.

FORTUNE, therefore, in its prophetic rôle, foresees a long life for the skyscraper and a numerous (if sometimes illegitimate) progeny.

What the skyscraper of the future, what the city of the future, will look like is another matter and one which demands more courage of the prophet. Mr. Hugh Ferriss has given expression in his drawings to a crowded and weighty imagination which may perhaps influence his fellow architects. But FORTUNE prefers, for all practical purposes, to do its crystal-gazing in the glass of Mr. Lamb's Empire State. The Empire State Building is a date in metropolitan architecture. It indicates, with its broad base and its free shaft, a means of realizing the city of isolated columns. And since its form is the expression of economic as well as esthetic ideas, its example has extraordinary power. If the building is successful in its rentals, it will dictate the architecture of New York for some time to come. And that architecture will constitute an adequate reply to the critics who maintain that the skyscrapers, in spite of their height, are insignificant because they cannot be seen.

In design also the Empire State and the News Building in New York are significant. Because many recently constructed buildings have been endowed with modernistic lobbies it has been assumed that the skyscraper of the future will be modernistic. Nothing could be less intelligent. The modernism of most contemporary American interior decoration dates from (and will date with) the International Exposition of Decorative Arts held in Paris in 1925. It is a synthetic, not a true, modernism and the expression of an architectural tradition already in decay. The new spirit in architecture is entirely opposed. It is technical. It proposes to make of engineering an esthetic activity, to compose its buildings in masses of volume, and to simplify its surfaces to the point where they appear merely as the geometric boundaries of the volumes created. It avoids ornament because ornament breaks the surface and destroys the rigorous unification of the whole. It is true that this new spirit in architecture is, so far, as European as Mr. Chanin's clamorous veneers. Its prophet is the Swiss, Charles-Edouard Jeanneret, Le Corbusier, and its best practitioners are Le Corbusier; the Dutchmen, Oud and Rietveld; the Germans, Gropius and Miës van der Rohe; and the Frenchman Lurçat. But although its contemporary expression as art and its pamphleteering are European, it is indigenous in America because the engineering through which it proposes to achieve its ends is indigenous in America. And it will



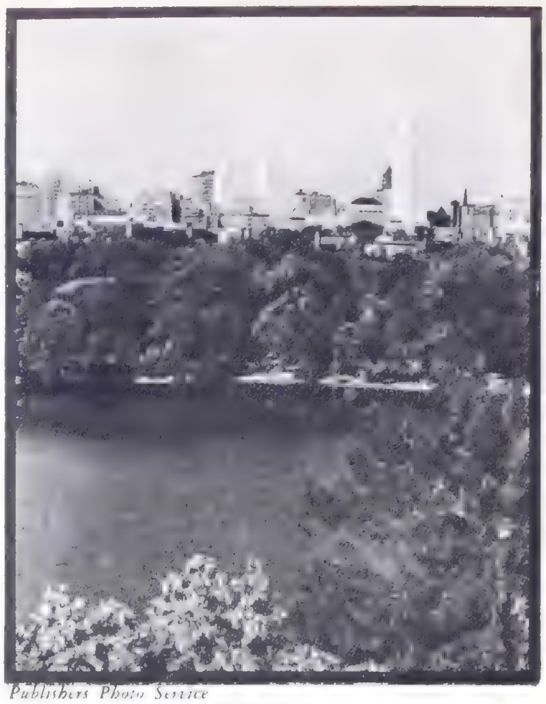
Courtesy Ferargil Galleries

CHICAGO IMPRESSION—*BY ROBERT HALLOWELL*

No less impressive than Manhattan's yearning towers are Chicago's skyscrapers. With the flag on its tower is the Tribune Building, to its left in the background is the Medinah Temple. The London Guarantee & Accident Building is in the center.

certainly achieve its American expression.

The matter of materials is equally hazardous. It is like the question of what the young woman will wear. There are plenty of manufacturers of patent compositions who would like to see tomorrow's skyscrapers sheathed in their particular materials. But it remains to be seen whether they will be. What is fairly certain is the fact that skyscraper walls will no longer be built as walls but as the thing they are—curtains. A skyscraper wall carries no weight but the wind load, and there is therefore no occasion for constructing it of weighty materials. To hang a steel frame with materials which were originally used in building because they were strong and heavy and could be trusted not to crush is inappropriate. And yet most American architects use stone on their skyscrapers. Even Mr. Raymond Hood, whose News Building is as frank and lucid and lovely in design as any American skyscraper, placed, in his Chicago Tribune Tower, a Gothic mask of stone upon a skull of steel. The only reasons for such a practice are reasons of tradition and habit. There are materials available which satisfy the structural requirements and may, it would seem, create new esthetic possibilities.


Publishers Photo Service

MINNEAPOLIS

Most prominent in this picture and most famed in Minneapolis is the Foshay Tower (thirty-two stories, 450 feet in height), an enlarged replica of the Washington Monument. Wilbur Burton Foshay, for whom it was named, has thrice built up fortunes in utilities; the collapse, November, 1929, of his third fortune provided front page news.

Corrosion-resisting steel manufactured by American companies on American and German patents has been used in the dome of the Chrysler tower and the walls of the Empire State Building, and architects and engineers expect that all-metal buildings will shortly be common. An apartment house with glass and metal "walls" is planned for Chicago, and there seems to be no reason why the method cannot be applied in skyscrapers. There is a great saving in rentable area. In the Chicago building the metal walls give 1,100 square feet as against 965 square feet permitted by masonry walls (a difference in the rental per floor, if the building were an office building, of $540; $4,400 as against $3,860). With proper insulation the three and one-half-inch metal wall equals a thirty-six-inch brick wall in heat and cold resistance. And if metal floors (all-steel battledeck) are used, the construction time can be cut from a year to eight or nine months, for the structure goes up like a Meccano set. And there is a saving in cost. It is estimated that an Allegheny metal wall, in place, insulated, lathed, and plastered, costs $1.53 per square foot as against $2.17 for masonry walls.

In addition to metal, there will almost certainly be a greater use of glass in the walls of skyscrapers. The Corning Glass Works is developing a glass which is neither transparent nor fragile, which will permit as much or as little light to enter as the tenant requires and which may be tinted for color effects. Glass has the space-saving advantages of metal, but will cost more than present exteriors.

As to height, it seems probable that the maximum economic height has now been reached and passed. Until elevators can be so arranged as not to eat into the heart of a building of more than seventy or eighty stories, it will not be profitable to exceed that level. The probability is that the prestige value of "the tallest building in the world" will carry one or two New York or Detroit or Chicago or Houston structures higher than the Empire State. But for all practical purposes the height of American skyscrapers is a function of the inventiveness of Mr. Lindquist and Mr. Bassett Jones and the elevator engineers of the next generation.

These various fragmentary prophecies add together to form FORTUNE's picture of the city of the future: a city of free clear columns walled in metal and glass rising forty or sixty or eighty stories into the air, a city from which the gawky totem poles and flat-chested silhouettes of the Grand Central district will be happily absent, a city beautiful from the air and from the sea. What it will be from street level the oracle neglects to say. That is a problem for governments. And the actions of governments none can forecast.

Fairchild Aerial Surveys, Inc.

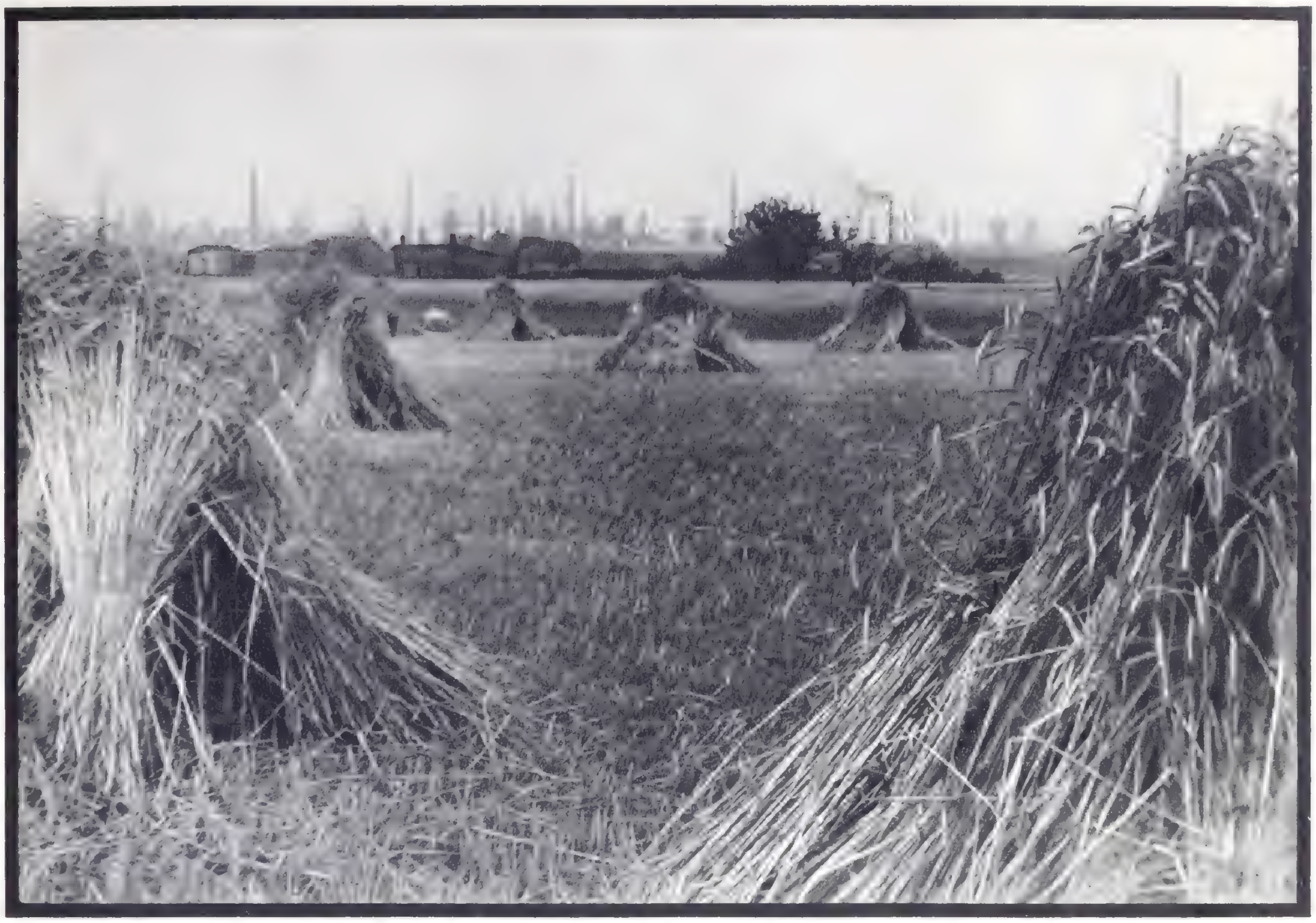
DETROIT

The downtown section. Detroit follows Philadelphia in number of tall buildings. Detroit is proud of the Penobscot Building, the Union Trust Building, the Barlum Tower and Book Tower, the David Stott and Fisher buildings, the Eaton Tower, and many another.

Fairchild Aerial Surveys, Inc.

BOSTON

Boston's best-known skyscraper is the U. S. Custom House Tower (thirty-two stories and 495 feet). There are also the United Shoe Machinery Building (twenty-four stories, 290 feet), "The Tower" (twenty-one stories, 245 feet), the Ames (thirteen stories, 188 feet).



Germany in the Workshop: An Industrial Portfolio

renice Abbott

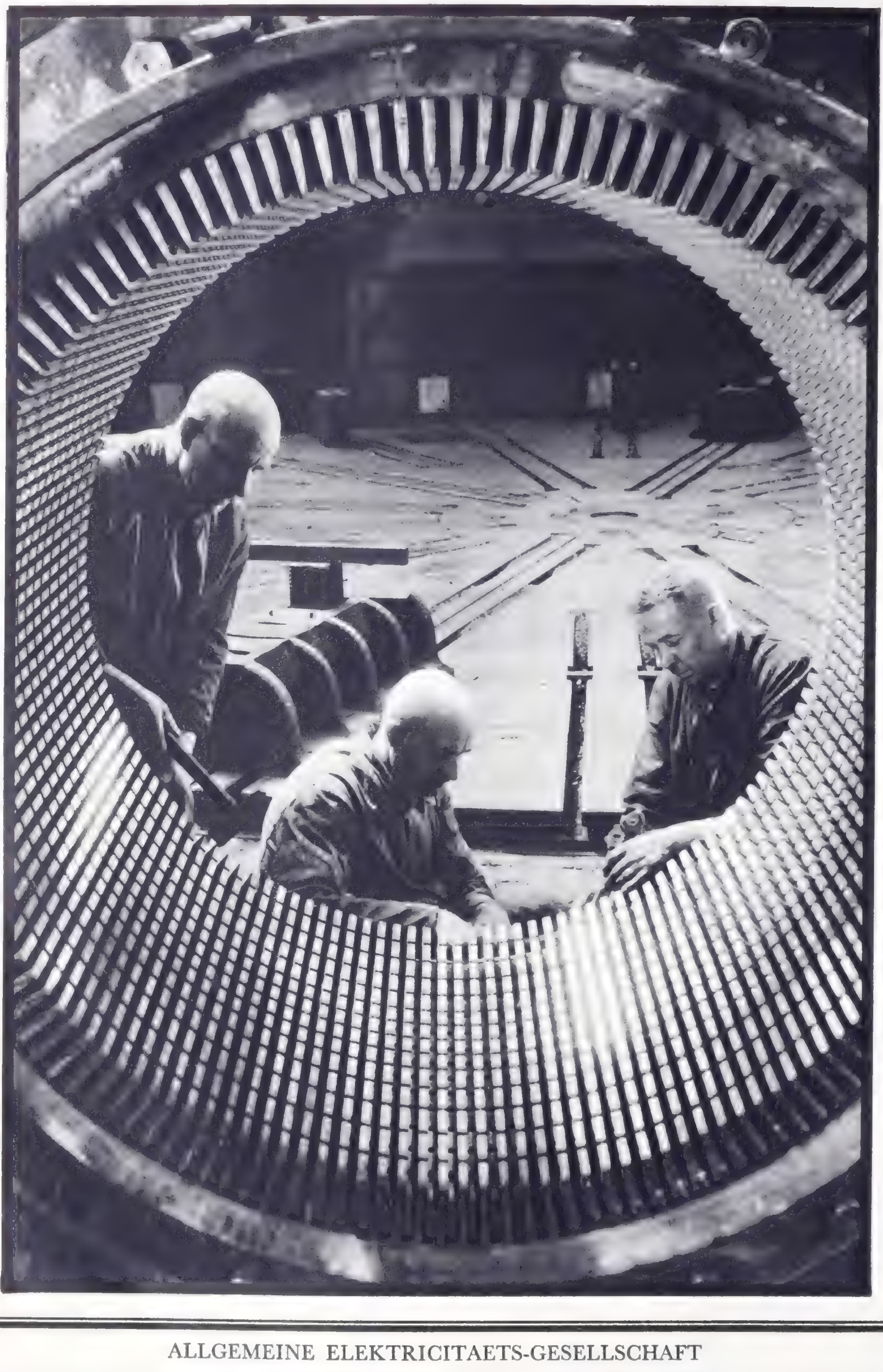
And the problems of an American photographer abroad.

THE charge was espionage. The prisoner was finally cleared, although the signature of Secretary of State Henry L. Stimson had made no impression. It was, finally, a portfolio of photographs of the Chicago stockyards which released Margaret Bourke-White (left) from the village jail of Bochum, Germany. Only these could convince the authorities that the photograph shown above was indeed part of a series intended for FORTUNE and not an attempt by a foreign government to blue-print Germany's vital industrial development in the Ruhr Valley.

The photograph shows in fact a section of the mile-long Krupp steel works at Essen. Its value to a foreign government, however hostile, would be nil. Nonetheless, Miss Bourke-White was permitted to go no nearer the plants, and even the taking of this photograph was the cause of an uncomfortable seven hours in jail. Throughout the Ruhr, where Miss Bourke-White last summer began a four-month tour of Germany and Russia, she met with suspicion and stubborn distrust. No photographer has been admitted to the great steel mills since the years preceding the War.

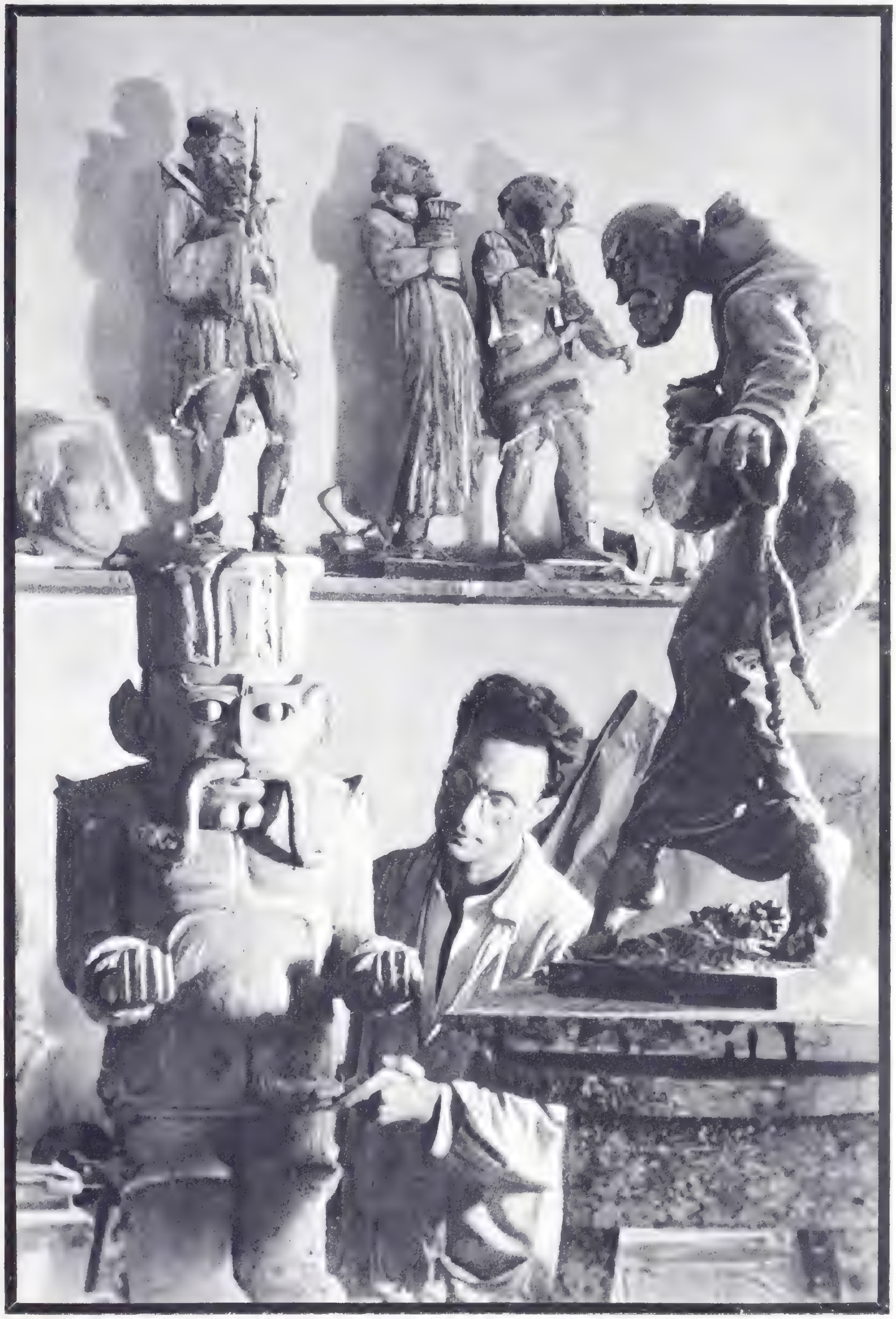
In Bremen, Miss Bourke-White found better treatment. Here lives Herr Ludwig Roselius, manufacturer of Sanka coffee, whose income is said to be the largest in Germany, and his daughter Hildegarde, who brought back many American ideas from her many courses at Columbia. Under their chaperonage, it was possible to wander with comparative freedom about Bremen's busy port. Two scenes of the North German

[*Continued on page 126*]



ALLGEMEINE ELEKTRICITAETS-GESELLSCHAFT

A generator stator in one of the seventeen plants of the formidable and important AEG, whose relation to Siemens-Schuckert is much like that of the similar General Electric Company to Westinghouse. Great geniuses of AEG were Emil Rathenau, the founder, and his son, Walther, moody, idealistic political leader. AEG has close agreements with G. E., is a reported ally in I.T.&T.'s European affairs.



UNIVERSUM-FILM AKTIENGESELLSCHAFT

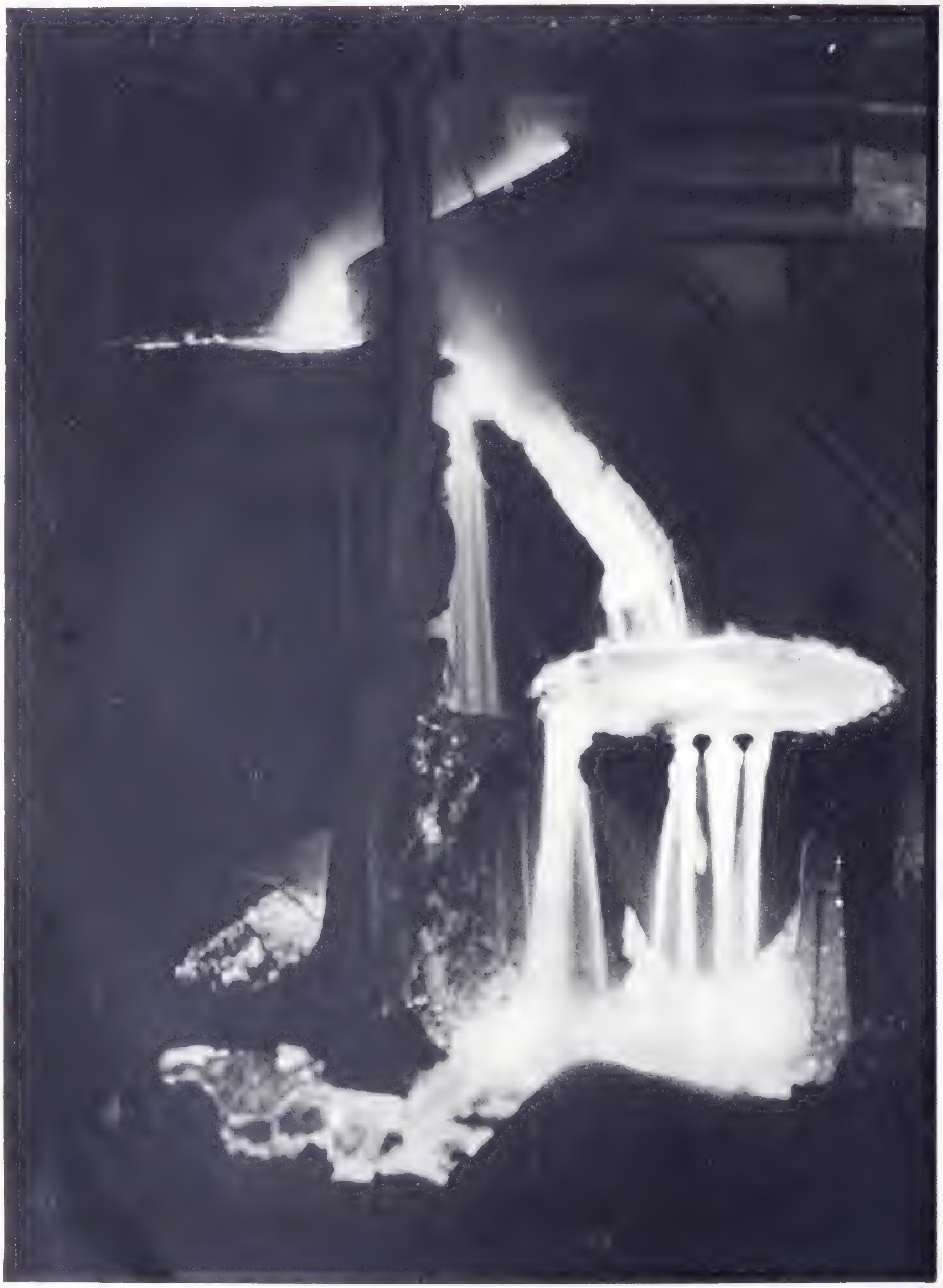
During 1929-30 UFA released eight features in the U. S. None duplicated the prodigious success of 1926's *Variety.* Most important of the UFA stockholders is Alfred Hugenberg, also the most noted of German nationalists and the country's most powerful newspaper owner. Above is the sculptor's corner in one of the workshops at Neubabelsberg, Germany's small but compact Hollywood.

THE *BREMEN*, HOME AT BREMERHAVEN

Immediately after the War, the North German Lloyd prepared to recapture its trans-Atlantic prestige, and the docks and shipyards of Bremen's port began to hum. In 1928 were brilliantly launched the *Europa* and the *Bremen*, which immediately started anew the inter-line competition in speed and chic. The company owns 498 ships, with a gross tonnage of 922,426.

PORTRAIT OF A SAILOR

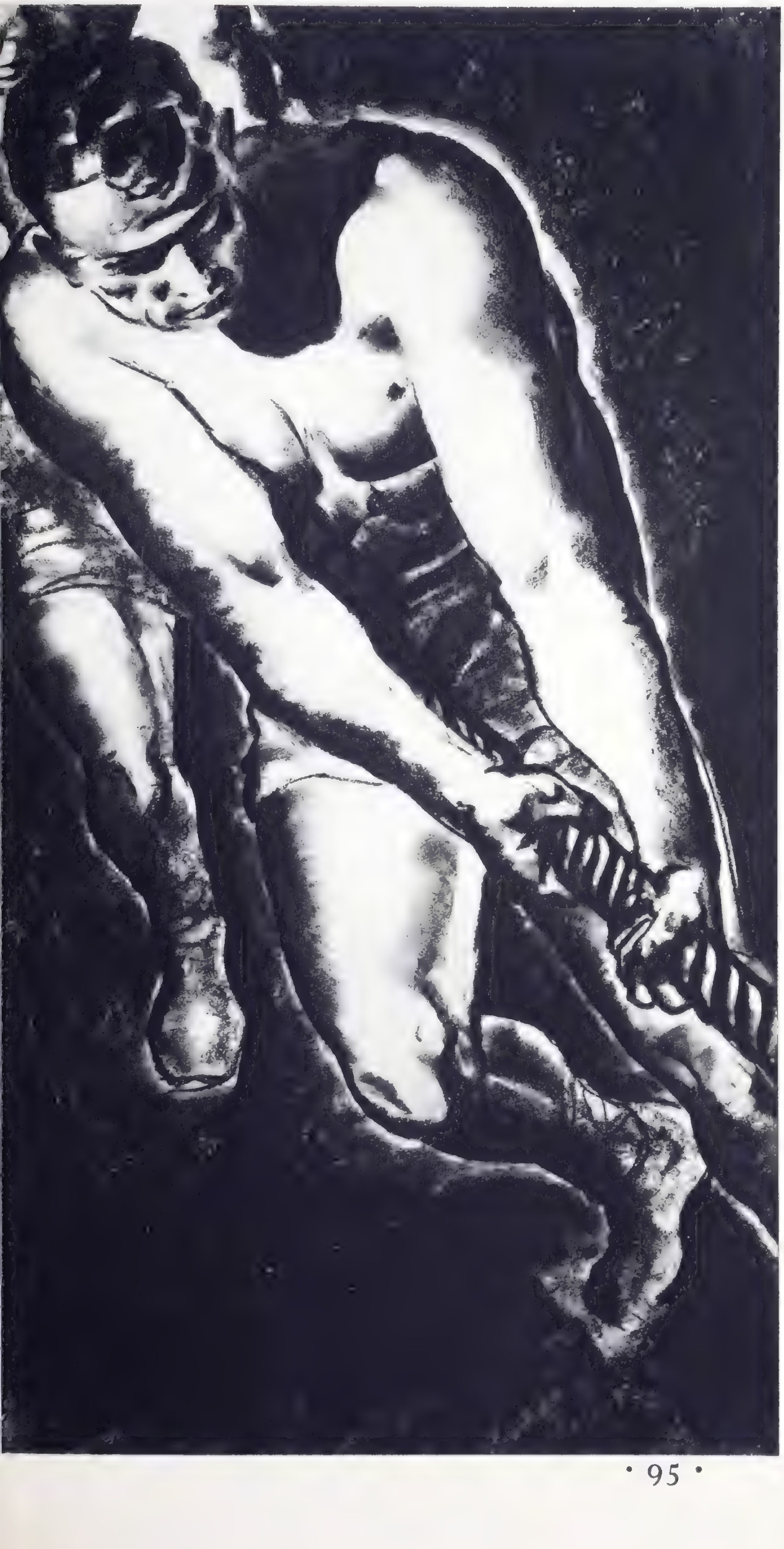
He at any rate has a job. He works for the North German Lloyd Line as one of their 5,173 employees in the North Atlantic service. But in Germany, unemployment increases and in the Ruhr are few such contented and well-fed Teutons. A brief official statement issued in October of this year announced that there were in Germany 3,088,000 persons registered as out of work and seeking jobs.



POURING THE HEAT AT OTIS STEEL COMPANY, CLEVELAND

Important as has been Miss Bourke-White's work in Europe, her great reputation was built in the steel mills of America. From such spectacular and challenging subjects as the above, she moved to the stockyards of Chicago, the Canadian pulpwood forests, the oil fields of Texas, garment shops in New York's Seventh Avenue, and many another U. S. industrial center.

★ TUG O' WAR ★



Modern advertising is a tug o' war. One advertiser trying to pull the consumer in one direction, his competitor pulling in another.

★

Victory goes with strength. But do not confuse strength with bulk. More powerful than "dominating space" is the skill that sways feelings, convinces minds, commands action.

★

YOUNG AND
RUBICAM·INC
ADVERTISING
NEW YORK
PHILADELPHIA

The $3,000,000 Machine

Which New York society created for the mass production of débutantes. Functio of Miss Juliana Cutting and why an advertisement in the newspapers would serve as well

WHEN two of them walk in step and arm in arm down Park Avenue on the west side, a photographer pops up and snaps their picture. It will appear on the society page of the *Post* or the *Sun* or the tabloid *News* or in the gravure section of one of the Sunday morning papers. Probably a sophomore at Princeton will see it and clip it, carefully scissoring away the one he does not adore, and place it tenderly in his desk drawer along with the bill from Joe's and the University Store. On or a few days before the event of her ball, hers will be the only picture on the society page and the familiar caption will read: "Miss So-and-So, daughter of Mr. and Mrs. So-and-So, who will be presented to society tonight at a ball at the Ritz." The ball, of course, is the débutante's apotheosis. It generally occurs some time after the opening night of the Metropolitan Opera although the season officially starts earlier with the Tuxedo Autumn Ball. It is now considered proper for the débutante to gaze, if not at life in the raw, at least at life in the décolleté, and the sophomore at Princeton may now propose. At no other time in her life (with the probable exception of her wedding) will she wear such glorious plumage, be so much in the eye of her friends, or so gently nursed by the public press to which she is not supposed to give too much attention. But the débutante's ritual to which her ball is the climax is not without pain. She gets tired and probably thin from party after party; she is atrabilious in the morning when she wakes to realize she must attend another luncheon. And her parents share the pain. They must get used to having the telephone ring more than seems possible. They must not mind if the house is forever filled with young men whose clothes and faces look singularly alike. The mother must be calm when an old country neighbor, wild with fury, telephones to ask why some particular protégé of hers was not invited to the lunch on Tuesday. And among other things to be borne is the cost. For no matter how humble your daughter's curtsey to society, it is virtually sure to cost more than you'd like.

There is, if the débutante lives in New York, the matter of the ball at the Ritz or Pierre's. It is true that every débutante in order to come out does not stand in a receiving line grimly clutching a bouquet in her white-gloved arms and automatically flashing a cast-iron smile to each of the 800 guests who hurries by. There are nearly as many ways of coming out as there are types of purses or tastes. But the ball is typical. And the ball, even when it is modest, costs a pretty dollar.

At the Ritz, for instance, the average is above $10,000, but occasionally when people spend $10,000 for floral decorations alone the price rises. The ballroom may be rented for $400 or $500 and the music (most popular: Meyer Davis, the Embassy Club Orchestra, Markel's) should not cost more than $1,200 to $1,500. Supper is from $3.00 to $5.00 per stomach, and there are generally 800 or 1,000 stomachs. For $5.00 a supper, Captain Willy of the Ritz will have eighty-five waiters serve hot bouillon, creamed oysters and scallops with mushrooms, squab, breast of guinea hen or quail, a complicated salad, individual ice cream, petits fours, and coffee. During dinner and dance, 115 attendants will attend. The cigarettes and cigars cost about $200; the mineral water, $250. During supper you can dispense, if you wish, with an entertainment. On the other hand you are apt to pay an entertainer anything from $500 to $1,000 or more. Chevalier asks $5,000. If you serve champagne, and if it is not *de rigueur* (as the French governess taught the debbie to say) it is at least customary, you will discover that twenty cases at $100 will cost $2,000. A sum not difficult to figure out. But you should be glad to know that you will probably not spend more than $400 on tips.

It is easy to decorate the Ritz's Crystal Room with $1,000 worth of flowers. It is less easy but more impressive when one spends $5,000 to $10,000. Probably the most elaborate of decorations were the orchidaceous gestures of the Manvilles for Estelle, now the Countess Bernadotte, and the Huttons for Eleanor, now Mrs. Preston Sturgess, whose débutante party last year reportedly cost $75,000. At this latter party they had a fountain (in which nobody fell) playing in the middle of the Ritz ballroom, which, electrically operated, was installed with pardonable pride and great enthusiasm by Kottmiller. Honors for decorating the Crystal Room have in previous years been shared by Kottmiller, Wadley & Smythe, and The Rosary.

Since presumably you want guests at your party, you should be willing to pay about $800 to cover the cost of engraving invitations, the cost of mailing them, and the work of a secretary to send them and take care of the answers (it is universally the opinion in New York that you must send 3,000 invitations to have 1,000 people come to your party).

With these expenditures the ball should be paid for unless late in the evening a guest happens to throw a potted palm at a mirror. But that is rare. Thus, taking an approximate average of the above figures, we find that a débutante's ball costs:

Ballroom	$ 500
Music	1,350
Supper	3,000
Entertainment	500
Cigarettes	200
Mineral water	250
Champagne	2,000
Tips	400
Flowers	2,500
Invitations	800
	$11,500

Which can probably be made less, which can, but very easily, be made more. For the present, at least, the ball is over.

• • •

The débutante may emerge from her sub-deb chrysalis in other ways. A dinner dance for 200 at the Ritz (Persian Garden) or Pierre's or Sherry's should not cost more than $2,000 and answers the purpose as well. Then, too, a débutante occasionally "slips out" with only an inconspicuous tea or perhaps no formal celebration whatever. It depends in the first place upon how well-known she is. If she has summered in Newport or the Hamptons and been to one or another of New York's fashionable schools, she will be invited to débutante parties and in general treated as a débutante. It is otherwise with the girl from Kokomo, whose parents sometimes insist that she be presented to New York society with as much fanfare as possible and who sometimes finds herself pitiably alone in the midst of 1,000 strangers who all seem to know each other and of whom she knows perhaps a score. But the papers will have carried her picture . . . "who will be presented to society tonight . . ." and Mrs. So-and-So's daughter will have accepted the invitation and the parent's friends in Kokomo will be impressed and perhaps out of it all their daughter will find a young man whom she can love, honor, and obey and do anything else to that might occur to her.

The débutante's ritual is complicated enough. She gives her ball, she must also give (her parents' friends generally give them for her) two or three formal luncheons, and she will attend a tea at her home and be duly admired and petted by her mother's friends, most of whom she knew and probably disliked before. There will be occasional theatre

Ever wake up, staring into space, the whole house suddenly on your mind?

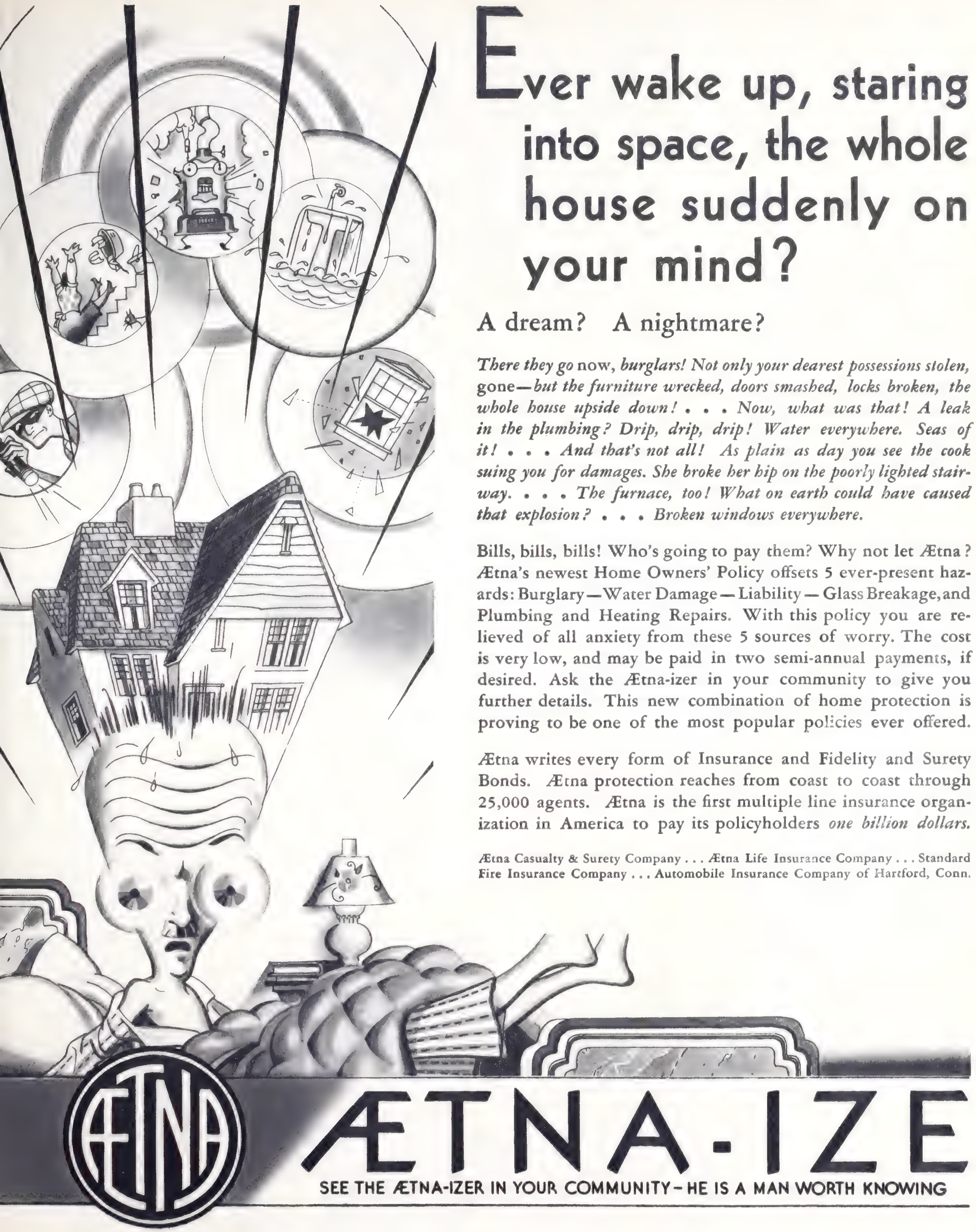
A dream? A nightmare?

There they go now, burglars! Not only your dearest possessions stolen, gone—*but the furniture wrecked, doors smashed, locks broken, the whole house upside down! . . . Now, what was that! A leak in the plumbing? Drip, drip, drip! Water everywhere. Seas of it! . . . And that's not all! As plain as day you see the cook suing you for damages. She broke her hip on the poorly lighted stairway. . . . The furnace, too! What on earth could have caused that explosion? . . . Broken windows everywhere.*

Bills, bills, bills! Who's going to pay them? Why not let Ætna? Ætna's newest Home Owners' Policy offsets 5 ever-present hazards: Burglary—Water Damage—Liability—Glass Breakage, and Plumbing and Heating Repairs. With this policy you are relieved of all anxiety from these 5 sources of worry. The cost is very low, and may be paid in two semi-annual payments, if desired. Ask the Ætna-izer in your community to give you further details. This new combination of home protection is proving to be one of the most popular policies ever offered.

Ætna writes every form of Insurance and Fidelity and Surety Bonds. Ætna protection reaches from coast to coast through 25,000 agents. Ætna is the first multiple line insurance organization in America to pay its policyholders *one billion dollars.*

Ætna Casualty & Surety Company . . . Ætna Life Insurance Company . . . Standard Fire Insurance Company . . . Automobile Insurance Company of Hartford, Conn.


ÆTNA
ÆTNA-IZE
SEE THE ÆTNA-IZER IN YOUR COMMUNITY—HE IS A MAN WORTH KNOWING

parties (which her parents will give), and she will go to several others (which somebody else's parents are giving). It will all take a great deal of the débutante's time and a fair amount of her parents' money.

There remains the matter of clothes. The average débutante allowance is $200 a month, and the time during which she buys clothes is from September to March, which would give her $1,400 for clothes if she didn't have to pay for taxis. However, the parents provide and will usually give the offspring an evening wrap, three best evening dresses, and a fur coat. Most girls wear $7.00 or $8.00 hats and cheap evening slippers, satin-dyed and with buckles that can go from one pair to the next. It must be remembered that débutantes dance continuously and that no matter how gallant the swain, he is prone to step on her toes. The débutante's evening wardrobe will probably consist of four good evening dresses ($150-$250), four others for lesser occasions ($100), one new evening coat with fur, and one old one. And it is quite all right to wear the same dress twice in the same week, but *never* should one wear it on consecutive nights. Your débutante can dress on $4,000 and be very smart, and there is no reason why she cannot meet the situation with $3,000. Be it said, however, that the above statements are anathema to most of New York's smartest shops. Bergdorf Goodman, for instance, cannot imagine the débutante who does not spend at least $10,000 on her clothes. Their estimate runs:

Ten to twenty evening dresses at ($150 average)	$1,500
American ermine evening wrap	2,000
Two velvet evening coats trimmed with fur	1,000
Accessories—shoes, stockings, riding boots, etc.	1,000
Daytime dresses, suits .	1,500
Fur coat	1,500
Other coat	400
Hats, lingerie	600
Sportingclothes (including riding habit, etc.)	1,000
	$10,500

A mother may bring a daughter into the world and consider it pretty much her own business. No such privilege is hers if she wishes to bring her daughter into society. She must find out just who is who in New York and tell them about her daughter. She must see to it that she invites the right people to her party and that her daughter is invited to the right people's parties. Even when there were supposed to be only 400 such people in New York, it took the rare ingenuity of a Ward McAllister to recognize them. Today it is probably the rather formidable Miss Juliana Cutting who takes his place. Of course no one in New York knows everybody. Not even Miss Cutting. But Miss Cutting so very nearly knows everybody (or at least their names) that she has become virtually omnipotent in the matters of society's routine.

Come September and most of New York's eligible bachelors will receive in their morning mail a printed notice reading in part as follows:

> MISS CUTTING
> would like to have your full name, also nickname, if any, and the address to which you wish invitations sent for the coming season, in order that you may receive any invitations sent you by her office.

(The advantages of filing one's nickname have never become obvious.)

A FEW OF THIS SEASON'S NEW YORK DÉBUTANTES WHOSE FAMILY NAMES ARE INSTANTLY RECOGNIZABLE TO OBSERVERS OF ART AND INDUSTRY.

DÉBUTANTE	*PARENT*
Justine Allen	Frederick Winthrop Allen (Directorates: Air Reduction, International Match, N. Y. Title & Mortgage, Otis Elevator, Remington Arms, Shell, Vanadium)
Florence Baker	George F. Baker Jr. (First National Bank)
Marguerite Brokaw	Howard C. Brokaw (Harriman National Bank)
Jean Chappell	George Shepard Chappell (*Cruise of the Kawa*)
Natalie Mai Coe	William R. Coe (gas, coal, railroads, horse racing)
Ethel Barrymore Colt	Ethel Barrymore
Sarah Davis	Norman H. Davis (statesman)
Laura Pope Day	Joseph P. Day (real estate)
Dorothy Ann Dillon	Clarence Dillon (Dillon, Read)
Alice Doubleday	George Doubleday (Ingersoll-Rand)
Doris Duke	Mrs. James B. Duke (tobacco)
Dorothy Fell	Mrs. Ogden L. Mills (N. Y. *Herald Tribune*)
Joan Fisher	Henry J. Fisher (publisher)
Helene Gales (engaged)	George M. Gales (Drug, Inc.)
Doris Havemeyer	Horace Havemeyer (sugar)
Eleanor Hoyt	Richard F. Hoyt (Hayden, Stone; aviation)
Mary Kelley	Cornelius F. Kelley (Anaconda Copper)
Margaret H. LeBoutillier	Philip LeBoutillier (Best & Co.)
Elizabeth Munn	Orson D. Munn (Munn & Co., *Scientific American*)
Zilph Palmer	Edgar Palmer (New Jersey Zinc)
Ruth T. Poor	Henry V. Poor (Poor's Publishing Co.)
Barbara Pratt	Harold Irving Pratt (oil)
Phyllis Pratt	Mrs. John T. Pratt (politics, oil)
Mary Ridder	Victor Frank Ridder (publishing)
Grace Green Roosevelt	Theodore Roosevelt Jr.
Amy Sterling	Louis Sterling (Columbia Phonograph Co.)
Natalie Swan	Joseph R. Swan (Guaranty Co.)
Gretchen Uppercu	Inglis M. Uppercu (Cadillacs)

In Miss Cutting's office are meticulously recorded many thousands of names. She knows exactly whose daughter is whose and whose father is yours. Gradually bu irresistibly she has become the acknowledged impresario for the débuts of New York's society children.

From all this drearily detailed work Miss Cutting makes a great deal of money. Many a mother would pay far more than she asks for the prestige of seeing the Cutting list, and many a person would pay equally as much for the prestige of *being* on the Cutting list. Miss Cutting has been said to charge $500 for permission to see her list and for other services sometimes to charge as much as $1,500. These other services consist of sending the invitations (an item hereinbefore budgeted) and, as an expert on New York society matters, seeing to it that a débutante attends a proper number of the proper charity balls and the like. Charity affairs, by the way, will generally add another $1,000 to the parents' budget. Of course, Miss Cutting's information gives her a great deal of power. She could, if she wished, virtually ostracize. Or if she liked you she could see to it that you were invited to occasions which under any other circumstances you never would attend. Not that she does, but she could.

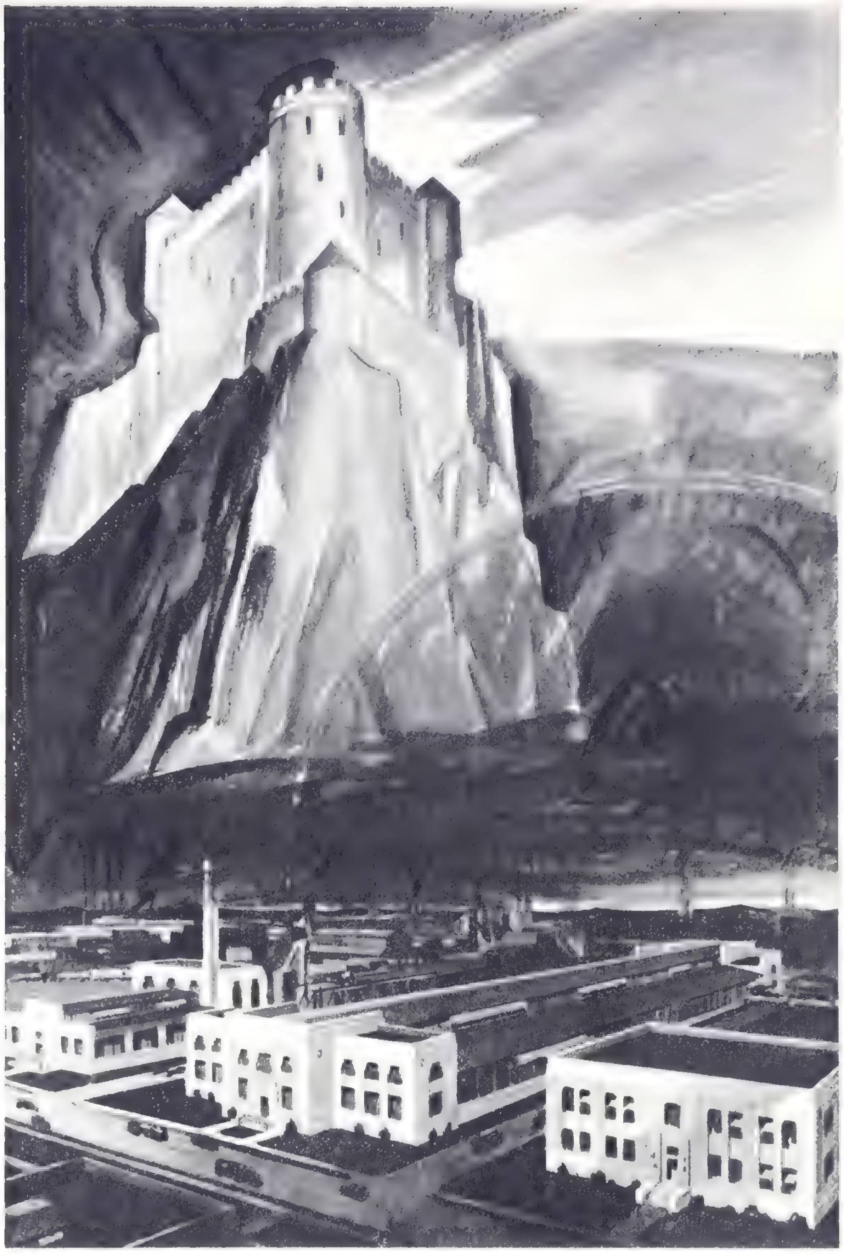
Miss Cutting is not alone in her field. For advice a mother may turn to Hostesses, Inc. or Tappin and Tew, both extremely helpful and pleasant. But it must be said that Miss Cutting possesses practically a monopoly in her unusual field.

This, then, is the $15,000 machinery which operates to create a New York débutante. With 200 or more débutantes a year, it means an expenditure of more than $3,000,000. It is the wan chaperones who line the halls of the Ritz (you may engage the services of a chaperone from Miss Dignum's for the moderate sum of $4.00 an evening). It is Captain Willy of the Ritz and Pierre and the mysterious omniscient Miss Cutting. It is the pretty little débutantes dancing until three or four every night in the cheap satin slippers and the expensive dresses. It is luncheon after luncheon, too many cigarettes, and eventual and fearsome boredom. It is the fear of not being seen somewhere and the great pain of going there. The whole purpose, on the parents' part, is to tell the world that their daughter, having now reached a certain age, is prepared to marry. Of a certainty it is a lavish way of making the announcement for, when you think of it, a notice on the society pages of the newspapers would serve the purpose as well.

●

YOUR PLANT
AN ECONOMIC FORTRESS
Yesterday
. . . BUT HOW ABOUT
Today?

●



ANCIENT fortresses with their towering ivy-covered battlements re but a more picturesque counterpart of obsolete plants in he world of manufacture.

For in industry, as in militarism, the most certain thing of ll is change. Revolutionary changes in production methods . . . ew inventions . . . aggressive competition . . . ever changing roducts . . . all are but representative of the many factors hat have made "white elephants" of a number of manufacuring plants.

Is your plant one of the many that are comparatively new . . . esigned to make money while running full blast . . . yet unable o turn a profit today while operating at two-thirds capacity?

If indeed you have any short values in your present production layout . . . need buildings or modernization . . . you can now cover your requirements in the greatest buyer's market in building—except for a brief period in 1922—that has existed since 1916. Industrial building costs today are nearly 20% under the 1922 low level.

Austin Engineers have helped many manufacturers take advantage of this situation . . . with up-to-the-minute ideas on plant arrangement . . . flexible layout for straight-line production capable of profitable operation even at fractional capacity . . . all the result of Good Engineering, always worth many times its cost.

Conditions today are favorable for immediate action. With 16 offices from coast to coast, Austin is close at hand . . . ready to discuss facts and figures, as applied to your problems.

THE AUSTIN COMPANY

THE
AUSTIN
METHOD

The Austin Method of Undivided Responsibility

Architecture, engineering, construction and equipment . . . separate responsibilities ordinarily . . . become one integral service, a single responsibility under the Austin Method. One nation-wide organization handles the complete project under one contract which specifically guarantees in advance total cost, time of completion with bonus and penalty clause if desired; and high quality of materials and workmanship.

ARCHITECTURE • ENGINEERING • CONSTRUCTION . . . CLEVELAND

$6,000,000,000

Is the nation's annual Christmas bill. This year, it may have a special meaning.

An Elderly Gentleman with a Peter Arno mustache sat suddenly bolt upright in his chair near the window in New York's Union Club on December 20, 1916, and slapped viciously at an item of news in that morning's *Times*. "Good lord!" he exclaimed, in the tone he reserved for collapses in the market and the demise of friends. The Man on His Right paid no attention to him. The Elderly Gentleman said again, and louder, "Good lord!"

The Man on His Right lowered his copy of the *Times* sufficiently to peer over the top of it.

"Did you read about the Christmas trees?" asked the Elderly Gentleman. Emotion that would not be suppressed vibrated in his voice.

"Christmas trees?"

"Yes. A corner. Here, I'll read it to you."

> Investigators in the employ of Joseph Hartigan, Commissioner of Weights and Measures, in their endeavor to unearth facts which would bring down the high cost of living, came yesterday upon evidence which, they said, indicated that the Christmas tree market had been cornered. Mr. Hartigan was unable to learn, however, whether the conditions found in a few instances were general.
>
> He said he thought the price of trees represented a jump of at least 100 per cent over last year, but he did not think that a boycott on trees would be popular.
>
> "I have heard of a Christmas tree king before," said the Commissioner, "and, if the reports of my agents are true, it looks as if a man might clean up $100,000 or more by cornering the market."
>
> Quotations from the Producers' Price Current yesterday, showed that the prices of Christmas trees had been climbing along with eggs, butter, meat, coal, and almost everything else. Here are the wholesale figures: trees 8 to 12 feet, each $1.50 to $2.50; 15 to 20 feet, each $5.00 to $15.00; 25 feet and over, $1.00 a foot.

"Well," said the Man on His Right, "what of it?"

"What of it?"

"It's only $100,000, after all. You could hardly call that a corner."

"But it's *Christmas* trees. It's the idea of the thing. You know, Tiny Tim and all that sort of thing. Good lord, when I was a kid at home, we used to go out and cut our own. To think of a person getting a corner on 'em . . . exploiting 'em . . ."

"When you were a boy," said the Man on His Right, "Christmas was Christmas. And Business was Business. You could take all the Christmas there was and put it in one pile and then take all the Business there was and put it in another pile, and they would not look anything alike. But you can't make two piles today. They're all mixed up together."

Business *has* invaded Christmas and Christmas has invaded Business. So, although every drop of Druid blood in the veins of the Elderly Gentleman of the Union Club froze at first mention of a corner in Christmas trees, he finally had to admit that if a corner in Christmas trees was what the unnamed speculator wanted more than anything else for Christmas, there could be found no good reason in this generation why he should not have it.

Christmas and Business are so hopelessly tangled up with each other that it is practically impossible to find out just how much one depends on the other. It is plainly not a case of Christmas ivy twining itself about the trunk of a sturdy business oak. It is more a matter of two oaks growing in awkward self-satisfaction out of the fertile and pleasant loam of the Fall Buying Season. Except that there is an essential unity to an oak, and there is nothing approaching unity in the Business-Christmas business. There is action, and there is continuity.

1929

Even in the mad winter of 1929, above the dying bellows of the Bull Market, could be heard sleigh bells and the quaintly anachronistic "Merry Christmas to all, and to all a good night." Santa Claus managed by his very madness to divert attention from the carnage in Wall Street for a little while, and by that much enabled the U. S. citizen to throw up philosophical bulwarks against the the bad times that were advancing on him.

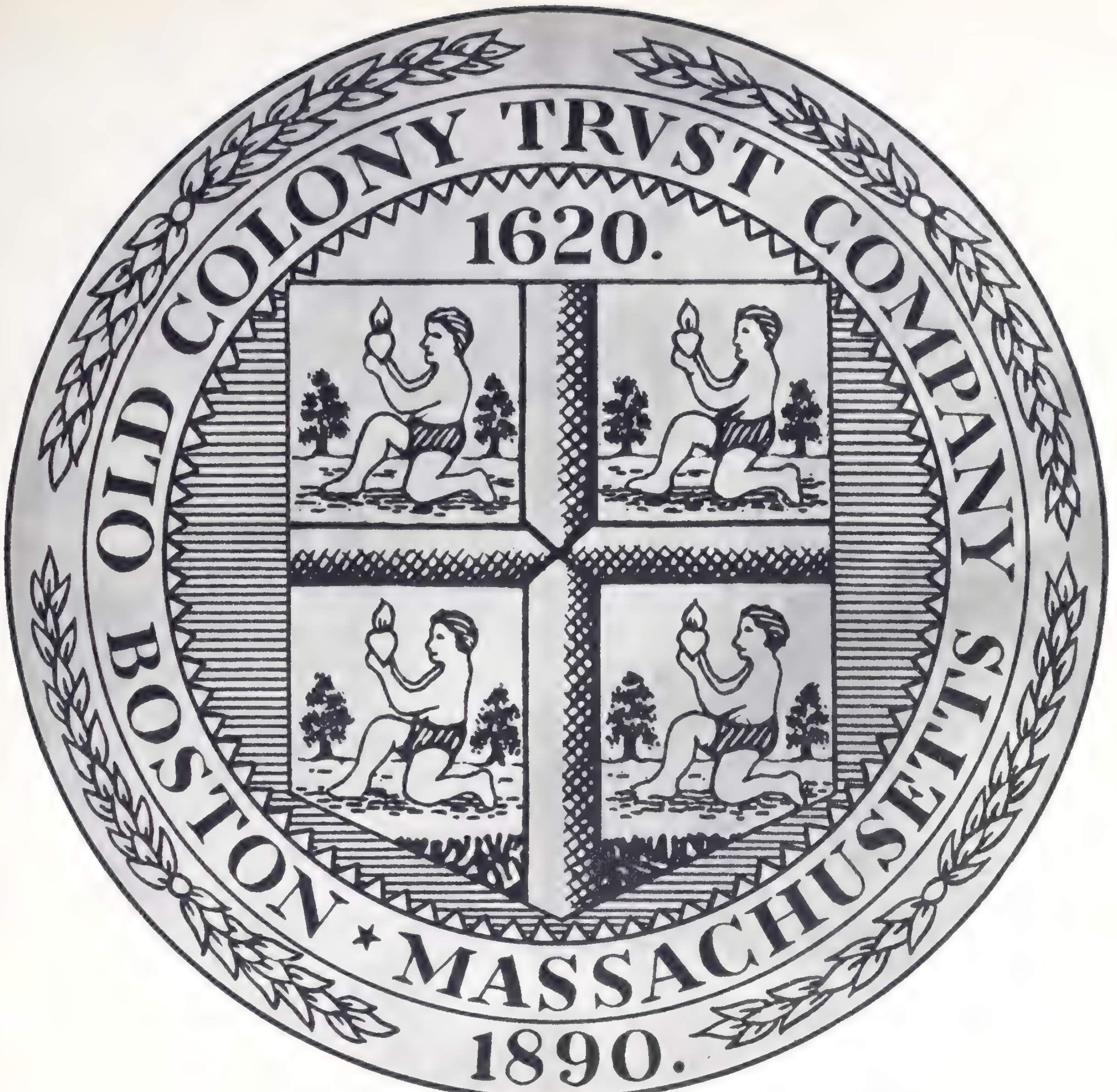
The Christmas shopping season begins in live earnest on the day after Thanksgiving. Many a department store intrudes loudly upon Thursday's holiday quiet to remind its neighbors by means of pageant or parade that Friday morning is the time to begin to buy. While many thousands of people lined Broadway in New York, Summer Street in Boston, and equivalent thoroughfares in most of the principal cities of the country last year to watch the antics of Santa Claus and his venal clowns, thirty-five heads of electric light, heat, power, and rail companies sat in a conference with President Hoover in the White House and pledged themselves to $1,810,000,000 worth of new construction. "Black Wednesday," November 13, was still news, and "Black Thursday," December 12, was only two weeks in the future. Statisticians had not yet finished laying end to end the dollars lost in the spasmodic contraction of market valuations. Eddie Cantor was reaping royalties on his funny book, *Caught Short.* Everyone was finding it extremely difficult to breathe in the vacuum created by the sudden departure of paper profits.

But inasmuch as Santa Claus's business had already progressed through all the stages of buying and most of the stages of store decoration and the training of extra holiday help, appreciable curtailment of plans was impossible. For all that grander gadgets than ever before were on display, there were deserted store aisles, beseeching looks upon the faces of department managers. And there were reports of stores which complained that in the throngs of people who crossed and recrossed their thresholds, there were only a few who actually made purchases. Particularly hard hit were jewelers who had made up expensive "gift numbers" for holiday sales which never were completed and the couturiers who were buried under an avalanche of cancellations of orders. Santa Claus, arriving on the day after Thanksgiving, had a sense of dropping in by mistake upon his own funeral. Here were the toys and baubles, the hosiery and vacuum cleaners, the emerald brooches and the electric refrigerators. In a million mirrors he saw his effigy dressed up in his own costume with the smell of mothballs still upon it. But the eyes that peered out through the gap between crepe whiskers and crepe hair were dubious.

Then came inventory week. For all the sad tales of deserted aisles, many and many a department store head reported that he had felt no appreciable reaction to the market situation in his Christmas sales. People were expecting a return to prosperity by spring in those days.

1930

But any department store manager who thought that he had already weathered the storm soon found the seriousness of his miscalculation. Unemployment first, and then curtailment of pay rolls during the months that followed, slowly but surely reacted upon his trade. The graph of his sales, unless his store was in a singularly fortunate bailiwick, gradually dropped downward. Not even normal seasonal upward movements were followed. In August, sales were off 9 per cent from 1929's August record, and the average for the year's first seven months (despite, on the whole, remarkable steadiness during the late winter period) was off 6 per cent. Thus did the department store, always a laggard in reflecting business conditions, at length show



OLD COLONY
TRUST COMPANY
17 COURT STREET, BOSTON
Affiliated with
THE FIRST NATIONAL BANK *of* BOSTON

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Many who do not reside in Massachusetts will find it expedient to establish a Trust, keep securities or employ other fiduciary services in that State. ⋆ ⋆ *Its favorable laws levy no property, income or inheritance tax on securities of non residents.* ⋆ ⋆ As New England's *largest Corporate fiduciary,* OLD COLONY TRUST COMPANY *solicits your business.*

★ ★ ★ ★ ★ ★ ★ ★ ★

A copy of a booklet of interest to non-residents of Massachusetts will be sent to you promptly upon request.

what had already been shown in other divisions of business and trade. When department stores were off 9 per cent, a new low for automobile production (55 per cent below 1929's August) had been reached. September's steel production was the lowest (with the exception of July, 1924) that it had been since the winter of 1921 and 1922. The consumption of electric power fell far below its trend line, and its decrease during the first week of October (5.1 per cent below 1929's figures for the same period) was the greatest to be reported since September, 1921. On October 4 the *Railway Age* noted that for the first time in railway history, car loadings were as small as they had been ten years before. During the slump of 1921, freight business was almost 22 per cent greater than it was in 1911. And in mid-October the daily average of 300 common stocks was five points below the rock bottom average of November, 1929. The thermometer dropped, putting an end to almost all outdoor work. A disheartening influx of jobless men into urban centers was beginning.

The depression, in short, had reached a point below which it could not penetrate very far, and businessmen, politicians, and economists began to talk about concerted and determined remedial action.

The needed thing, all agreed, was an acceleration of spending. An increase of $267,000,000 in savings deposits throughout the U. S. between June 30, 1929–June 30, 1930 indicated that even with lessened income people were setting aside greater liquid reserves—a hesitancy to spend which accelerated the forces making for reduced business activity. If these reserves could be released, if goods could be started moving at a more rapid rate, if shelves could be depleted, then the wheels of production could be started revolving, idle men and idle capital put to work, and the tide turned. Philadelphia began a determined "Buy Now" campaign and exhorted the rest of Pennsylvania to follow suit so that that state could come out of the slump first.

* * *

It is possible to do one's Christmas shopping almost anywhere. There are businesses that exist only by virtue of the holiday trade. Of fireworks, even, one-fourth are sold then, because below the Mason-Dixon Line Christmas and not July 4 is the day of pinwheel and firecracker. Were it not for Christmas, novelty shops and greeting card houses, many of them, would vanish. But it is in the department store where novelty shop and toy store are side by side and plum pudding and mufflers are sold under the same roof that Christmas madness is collected in one grand *mêlée*, there that Santa Claus makes his headquarters.

Each year in Manhattan, R. H. Macy & Co. does him honor with a parade of Gargantuan balloons, designed by Tony Sarg and constructed by Goodyear. The parade comes down Broadway on Thanksgiving Day, and in 1929 consisted of ten balloons representing the Katzenjammer family of comic supplement fame, plus a dragon 177 feet long, a dog, a turkey, and a horse and rider. All of the balloons with the exception of the dog were inflated with helium (of which gas R. H. Macy & Co., by virtue of this annual parade, is the largest commercial user in the U. S. except for companies actually operating airships) and were released after their march at the entrance of Macy's store. To each was attached an offer of $100 reward for return.

In 1929, also, The Fair in Chicago provided what was presumably fitting Christmas entertainment in vaudeville show in which Sophie Tucker was the headliner. The inimitable Miss Tucker, famous for her bawdy lieder, was assisted by Bert Lytell, prominent actor in what Miss Tucker calls the "movizz," Fisher's Animal Circus, oriental magicians, jazz orchestras, and several local masters of revelry. The entertainment was staged in an arena set up in the toy department. Audiences of 2,000 were entertained at each performance. In addition, for a fare of twenty-five cents, children were carried in a zeppelin to Santa Claus and were presented by the saint with a surprise package, photographed on a pony's back with Santa Claus at four pictures for fifty cents. (Not only The Fair has discovered the value of the surprise package racket, highly recommended by *Playthings*, foremost trade paper of the toy men. By this simple device, it is often possible to clean up tremendous stocks of otherwise unsalable gimcracks.) The Fair not only sold surprise packages but gave away some 50,000 Bob White whistles.

Scarcely a city or town in all the broad land does not reflect the urge, what with Filene's clerks' choral society coming down to the store early in the frosty Boston mornings to send carols ringing up and down the aisles (and out over a wide radio hook-up) and Wanamaker's hiring Robert Edwards, the ukulele impresario, to paint fresh murals all over the walls of the toy department while psychologists in attendance advise parents, aunts, and Old Ladies from Metuchen what to buy for the three-and-a-half-year-old introverts (but that is mixing Christmas and Business up with Art and Science as well and might lead almost anywhere). And what with Kaufmann's in Pittsburgh bringing John Vassos, the Greek artist who made Oscar Wilde contemporary, to their store to tell them how to make the place look like one of his Packard custom-built body advertisements or the *Ballad of Reading Goal*. And what with Bamberger's sending out a fifty-four-foot float (fifty-four feet, four inches, to be exact) over most of northern New Jersey with either reindeer and eskimos or just plain old fashioned carolers on it, and what with Santa Claus's son (pat. applied for!) coming to the Jordan Marsh Company in Boston by airplane, power boat, and motor cavalcade. And what with Christmas, finally, in its most Dickensian aspects organizing itself along the approved lines of Going Business or a Political Machine—kettles and chimneys on every street crossing, bells jangling, coins dropping . . .

Thus, in 10,000 department stores, does one find justification for the oft-raised lament that Christmas has become what archæologists say it once was—nothing but a pagan festival: Sophie Tucker singing *Eli Eli* by request . . . psychologists . . . airplanes . . . surprise packages . . . street parades . . . performing midgets . . . 50,000 whistles Bob-Whiting in Chicago . . . Thanksgiving behaving as a curtain raiser . . . somebody patenting the "idea" of the son of the grand saint . . . and, as Walter Winchell says, "you and you and you and you" spending SIX BILLION DOLLARS in an "average" year.

* * *

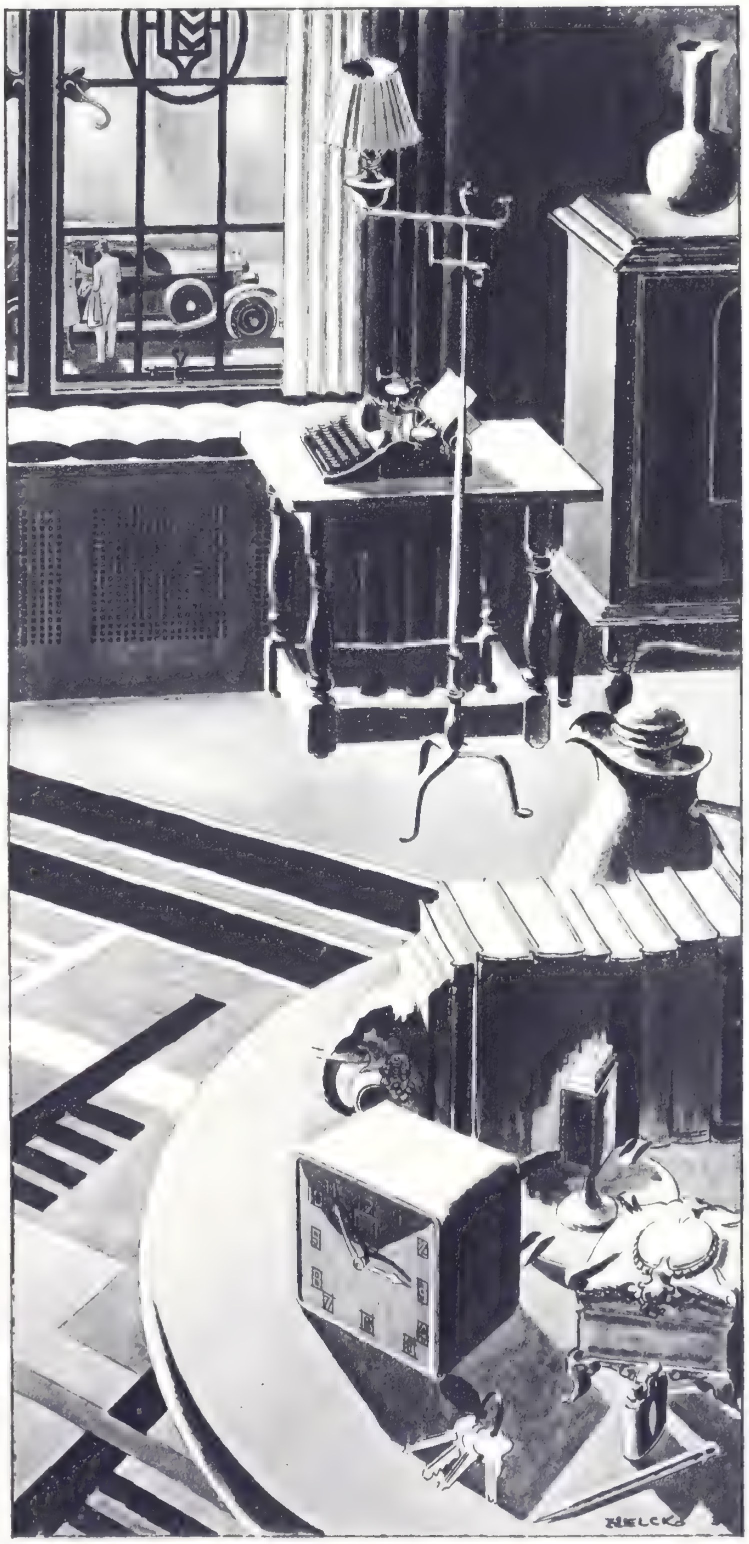
Santa Claus has already put in his appearance in some quarters this year. This Thanksgiving week sees another Macy parade. And the yearly Saturnalia opens from Portland to Portland on Friday. That is a fact—one of the few facts that business prognosticators and trend calculators have had this year to be thankful for. You will go to your favorite store and buy presents for your wife or your husband and for the children and for Aunt Fannie and Uncle Horace. How much you will spend is the riddle which Santa Claus and his thousands of merchandising assistants have tried to solve in advance. And your favorite economist has been staring over Santa's shoulder watching him write down figures and erase them, hoping to be the first to announce the answer. Santa Claus will not know before December 26. But it is certain to be in excess of $5,000,000,000. That is the gloomiest prediction that anyone has yet made. From the industrial East where business is bad to the far Northwest where it is fair, department stores are preparing for more sales than last year, though on account of the almost universal recession of commodity prices they do not expect that it will much more than equal last year's dollar volume.

Their hopes are, it must be said, sanguine hopes in which the statisticians with their charts do not acquiesce. If buying power is less as measured in terms of dollars, it is, they say, as great in terms of what a dollar will buy, and there remains only the hurdle of psychological reluctance to buy. This reluctance they rely on Santa Claus to overcome. In late September, Julian Goldman pointed out to an audience of economists and business journalists that if each U. S. family could be induced to spend $100 immediately, nearly $3,000,000,000 worth of commodities would be consumed. This, he said, would give industry sufficient acceleration to pull itself out of the slump. The more than $5,000,000,000 which Santa Claus, aided by Sophie Tucker, Tony Sarg, and a very competent corps of assistants, will pull out of pockets and bank accounts between this Friday and December 24 exceeds that demand magnificently.

Thus has come Santa's big chance. If he does the not impossible and turns the tide, the man who does not believe in him will nevermore be found.

from DOLLAR CLOCKS . . .

. . *to* MOTOR CARS

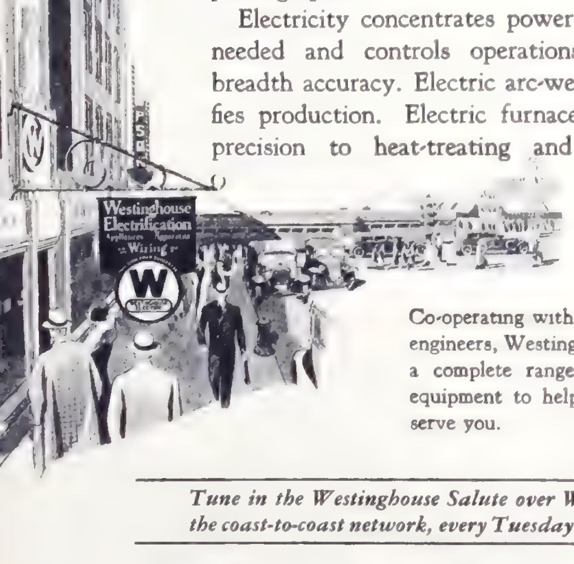


the Metal Worker gives you an Electrical Discount

Eagerly, merrily, in thousands of factories, strange-looking metal shapes tumble out of amazing machines. Into one end goes a raw piece of metal. Out of the other end come gears, bolts, brackets, base plates . . . or what you will. These mass-production machines, plus the electric motors that drive them, make it possible nowadays for moderate incomes to afford automobiles and radios, as well as the leisure to enjoy them.

Take these electrically driven machines off the production lines and in nearly every case the cost of the finished product would be vastly increased. The metal worker thus gives you an "electrical discount" on nearly everything you buy today, from trucks to toys, from pliers to phonographs.

Electricity concentrates power where it is needed and controls operations to hair's-breadth accuracy. Electric arc-welding simplifies production. Electric furnaces lend new precision to heat-treating and tempering.



Co-operating with metal-working engineers, Westinghouse provides a complete range of electrical equipment to help the industry serve you.

Tune in the Westinghouse Salute over WJZ and the coast-to-coast network, every Tuesday evening.

Westinghouse

Windowless, Odorless, Noiseless, But Not Colorless

Is the industrial paradise which Simonds Saw is building.

THE Simonds Saw & Steel Company, of Fitchburg, Massachusetts, is ninety-eight years old. At this ripe old age, it is in the process of building one of the most revolutionary industrial plants of many years. The Austin Company, builders extraordinary of factories, designed the plant and will build it on the site of the old Boston & Maine car shops in Fitchburg. Austin engineers plotted and planned the whole thing in complete disregard of tradition, convention, and even experience. They set out to design an ideal factory regardless of what had been done before, to lay out a workshop in which the employees would work under optimum conditions as regards their five senses. So meticulously did they control working conditions inside the building that any intrusion of such variable natural factors as sunlight and fresh air would have upset the entire scheme of things. Hence they did away with all windows and prepared to manufacture their own light and air. "There won't be a pane of glass in the entire building," proudly declares Gifford K. Simonds, general manager of Simonds Saw. The one question to which the engineers paid any attention was: What would be the ideal conditions under which to work with machines? No windows is only one of their answers. Others, distributed among the four senses they affect, are:

Sight.—All machines will be orange-colored in order to lift their visibility and thus prevent accidents. Walls and ceiling will be blue, green, and white: blue to reflect ultra-violet rays, green as "the active or energizing component," and white to give an effect of light and cleanliness. Light will come from 1,000-watt lamps mounted eighteen feet above the floor line and spreading one sheet of light of uniform intensity (about three times that in most offices) over the entire building. Ultra-violet will be introduced into the light for its health-giving properties.

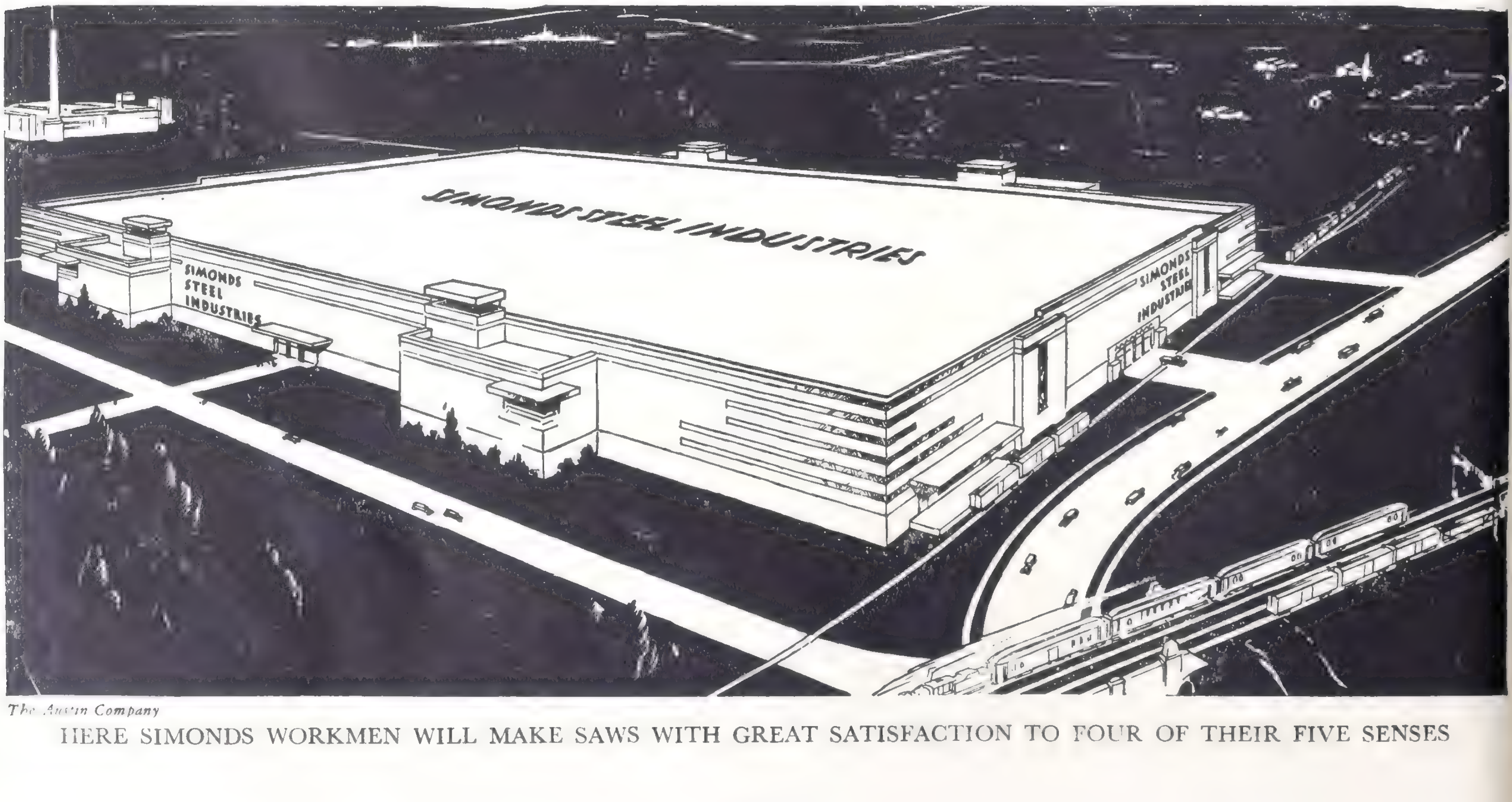
Touch.—"All that we require nature to do in the new plant," says General Manager Simonds, "is to furnish us the air. We'll make that air feel as ideal as on a spring day." A temperature and humidity control as elaborate as in any theatre will change the air every ten minutes, drawing in fresh air, washing it, and either warming or cooling it as the season requires. The worker will be fanned by a gentle current of fresh air, with all the drafts carefully eliminated.

Smell.—All fumes, gases, and exhausts are to be removed from the building by underground ducts.

Hearing.—Walls, ceiling, and floors are acoustical throughout. The walls, of acoustical cinder block, are expected to absorb at least 60 per cent of the usual sounds. The roof is made of various carefully planned layers of metal, rock fiber bound with asphalt, insulating board. The floor is made of acoustical wood blocks on a cement foundation. Among the machines any potential noise-makers will be insulated from the floor on cork pads. Workers at even the biggest machines will be able to make themselves heard without raising their voices.

Lest Simonds saw-makers, shut out from the sun during their entire working day, should turn into a species of human mole, their working hours have been thoughtfully arranged so that they may have half of the daylight hours outside the factory. There will be two shifts a day: one from 5 A.M. to 2 P.M. and one from 2 P.M. to 11 P.M. Still more gracious a gesture on the part of the company is the quality of the lavatories, which will be comparable to those in any theatre or skyscraper.

From all this bread cast upon the waters, the Simonds company expects to benefit in the shape of increased employee efficiency. Experiments have shown that the elimination of nerve strain, fatigue, and liability to accident which should result from the new plant may be expected to raise efficiency percentages by as much as 33 per cent. All such predictions, of course, must be pure hypotheses until the factory is in actual operation. Whatever the outcome, it is a remarkable experiment and one in which the Simonds company is sinking $1,500,000 as a kind of celebration of its approaching centennial.



The Austin Company

HERE SIMONDS WORKMEN WILL MAKE SAWS WITH GREAT SATISFACTION TO FOUR OF THEIR FIVE SENSES

"It's a General Electric!"

A GIFT OF BEAUTY, CONVENIENCE, USEFULNESS, ECONOMY—WHAT A GLORIOUS GIFT FOR A WOMAN TO RECEIVE. WHAT AN IDEAL GIFT FOR *YOU* TO GIVE AS AN EXPRESSION OF TRUE REGARD!

• • •

Picture her on Christmas morning—her delight and surprise—her unspeakable joy—when she finds it standing there—a gift of gleaming beauty, which through the days and months and years to come will give carefree and economical service—reminding her constantly of the gentle understanding and consideration which prompted the selection of such a gift.

Here is a Christmas gift she will treasure as much as those little personal things you will give her to adorn her beauty—for here is a gift that will adorn her *home* with beauty and give added happiness and joy to her entertaining. It can be delivered on Christmas morning.

GENERAL ELECTRIC

REFRIGERATOR

SILENT · AS · THE · NIGHT · BEFORE · CHRISTMAS"

It May Not Be Safe to Predict, *but* ~

"Do you know," asked the old gentleman, "that you are only just catching up with the public in this matter of aluminum?"

TWO men were motoring along a country road in Pennsylvania. A motor truck with an aluminum body flashed by them.

"That reminds me, do you know all about the new things that are being made from strong aluminum alloys?" asked the younger man.

"Yes, I keep pretty well posted," replied his elderly companion, one of the founders of the aluminum industry, now retired. Then he asked abruptly, "But do you know that you are only just catching up with the public in this matter of aluminum?"

The younger man looked incredulous. "Just catching up?" he demanded. "Why—"

"Fact," interrupted the other. "After young Charles Martin Hall had worked out his process of extracting aluminum from its ore by electricity, back in 1886, we started to make aluminum by the pound instead of by the ounce. Right away everybody began to predict big things for this new metal that was only about a third as heavy as iron or steel."

"I remember," he continued reminiscently, "that people began to talk about aluminum trolley cars, aluminum bridges, aluminum frame work for skyscrapers, aluminum railroad coaches, and a lot of other things. We used to spend about half our time explaining why aluminum couldn't be used for such purposes. It wasn't merely because it was still too costly, but because the only kind of aluminum we knew anything about then wasn't strong enough for such heavy duty."

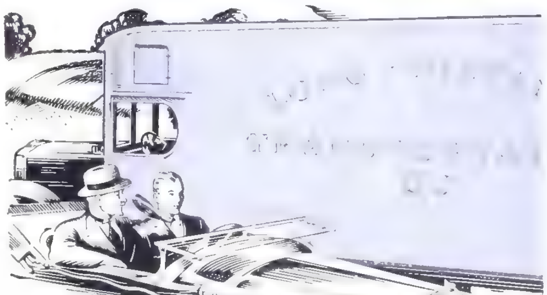
The public's fancy of aluminum skyscrapers may yet be realized.

"Hard-Boiled" Aluminum Alloys

"And then," anticipated the younger man, "they worked out these 'hard-boiled' aluminum alloys."

"And then," repeated the other, nodding assent, "the research men worked out the aluminum strong alloys. I remember the development step by step, first the adding of small quantities of certain other metals to aluminum while it was still in a molten state, and afterwards the heat-treating of the alloyed metal to make it tough. It took a long time to complete the work, but when it was done, we had a metal as strong as structural steel—and still aluminum-light."

"Now," concluded the veteran with a quiet chuckle, "you're faced with the job of telling the public that it was right after all about aluminum trolley cars and aluminum railroad coaches—and it may yet prove to have been right about aluminum framework for skyscrapers, and lift-bridges, and the like. It begins to look that way to me."



This is, indeed, the curious predicament of the aluminum industry today! No one could have foreseen, 25 or 30 years ago, that by the science of metallurgy aluminum would be made strong enough for building such things as armored trucks, railroad tank cars, motor bus bodies, trolley cars, and railroad coaches.

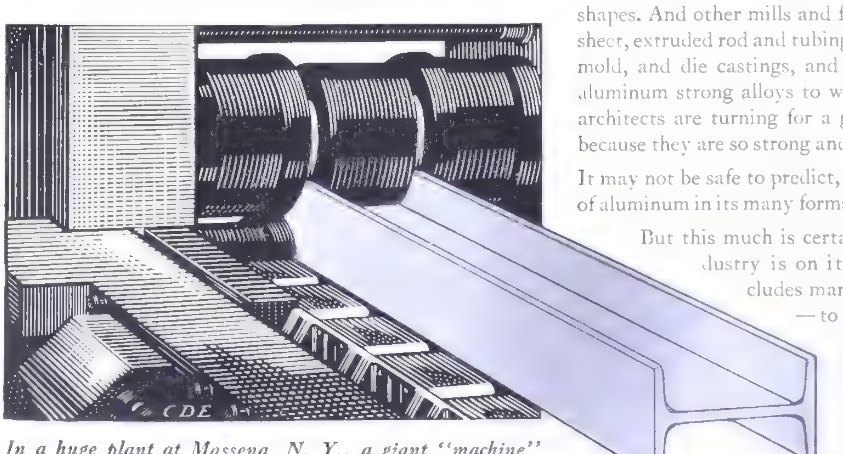
The Public Had Expected Miracles

Knowing nothing of the limitations of ordinary aluminum, the public had expected miracles—and the public was right, as it so often is in its expectations!

It was inevitable that the metallurgists should find a way to make this light metal more useful. And once the scientists had mastered the art of making aluminum strong alloys, it could be taken for granted that the engineers would make rapid progress in applying these "hard-boiled" aluminum alloys to the problems of transportation and building construction.

Trolley cars and railroad coaches with bodies made largely of aluminum strong alloys are in service today on numerous roads.

Motor buses and motor trucks, tank trucks and trailers, with aluminum strong alloy bodies, are now speeding along the country's highways.

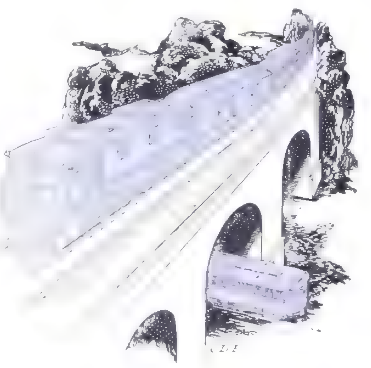


In a huge plant at Massena, N. Y., a giant "machine" rolls beams and channels of aluminum alloys as strong as structural steel.

Truck cranes with booms made of strong aluminum alloys are being used in construction work, while shop cranes made entirely of strong aluminum alloys are helping manufacturers.

Railroads are beginning to experiment with strong aluminum alloys for locomotive connecting rods. Section cars made of aluminum are today speeding up and down railroad lines.

Architects are beginning seriously to discuss the use of aluminum strong alloys for many purposes in our skyscrapers. (Already aluminum is being used for radiators, shower partitions, doors, screens, fences, window frames, elevators and decorative forms on skyscrapers and public buildings.) And it is entirely possible that some day, as these great cloud-piercing structures go higher and higher, their upper framework of beams and girders may be of light strong aluminum alloys. We may, in fact, one day realize completely the public's rash early dreams about aluminum.



Aluminum trains and trolleys will soon be common in our cities.

Tees, Zees, and Beams of Aluminum

It was faith in the broader usefulness of aluminum and its own trade-marked metal, Alcoa Aluminum, which led Aluminum Company of America to build a great plant at Massena, New York, for making large structural shapes of aluminum strong alloys—I-beams, H-beams, angles, channels, Tees, and Zees. These are standard size shapes, up to ten inches in depth and eighty-five feet in length.

Already, though this plant has been completed less than a year, it is daily turning out large quantities of structural shapes. And other mills and foundries are producing rolled sheet, extruded rod and tubing, wire cable, sand, permanent mold, and die castings, and drop forgings in these same aluminum strong alloys to which American engineers and architects are turning for a great variety of new services because they are so strong and yet so light.

It may not be safe to predict, even yet, just how far the use of aluminum in its many forms will go in the future.

But this much is certain, the entire aluminum industry is on its toes—and the industry includes many companies besides our own—to meet the public's fullest expectations. The story of aluminum has only begun.

ALUMINUM COMPANY
of AMERICA; 2402 Oliver
Building, PITTSBURGH,
PENNSYLVANIA.

eystone

ugene Morgan Stevens, *born n February 1, 1871, in Preston, Iinnesota; now of Chicago*

Underwood & Underwood

Dr. James Aston, *born in 1876 in England; now of Pittsburgh, Pennsylvania*

Ioward Hughes, *born on Decemer 24, 1904, in Houston, Texas; ow of Hollywood*

© T. H. Hite

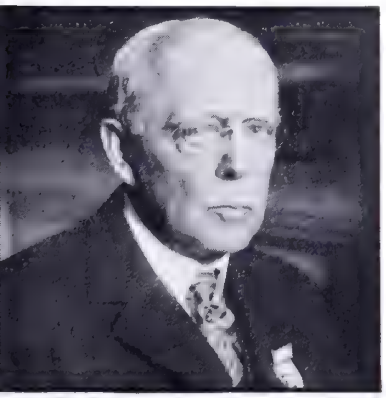
Richard Redwood Deupree, *born on May 7, 1885, in Norwood, Virginia; now of Cincinnati*

International

Milton Diamond, *born on August 2, 1889, in New York City; now of New York City*

Pirie MacDonald

Lester North Selig, *born on September 10, 1893, in Brooklyn, New York; now of Chicago*



nternational

Arthur Dehon Little, *born on December 15, 1863, in Boston; now of Brookline, Massachusetts*

© Harris & Ewing

Michael Harrison Cahill, *born on November 19, 1874, in Lexington, Ohio; now of New York City*

Career Milestones

¶Eugene M. Stevens has changed his job four times. Each time he has left a job in which he was doing well to enter an entirely new field in which he correctly thought he could do better. First change came at the age of nineteen when he resigned as timekeeper for the Winona Wagon Company to go into F. H. Peavey & Co., at that time (1891) the largest grain merchants in the Northwest. Ten years later he gave up his job (he had become Mr. Peavey's right-hand man) to go into the bond business for himself. By 1918 he had become one of the leading investment bankers of Minneapolis, but he did not hesitate to come to Chicago and take a vice presidency of Illinois Trust & Savings Bank at the invitation of the late great John J. Mitchell. When his bank merged, Mr. Stevens became president of Continental Illinois Bank & Trust Co., now fifth largest bank in the country and the second largest outside New York City. His fourth change will be consummated next January; he will become chairman of the board of the Chicago Federal Reserve Bank, thus rounding out his career with a public office of the first importance.

¶For many years metallurgists have been seeking a mechanical method of "puddling" wrought iron, i.e., evenly distributing throughout the iron those fibres of slag that make wrought iron rustless and noncorrosive. Ponderous revolving contraptions have been devised, but none of these gigantic cocktail mixers was efficient enough to displace the brawny iron puddler and his skillful hand manipulation. It remained for Dr. James Aston to solve the problem with a method as simple as most previous devices had been complicated. He conceived a Gargantuan bromo-seltzer mixing in which a cup of molten iron is poured into a cup of molten slag. The iron, hotter than the slag bath, solidifies and drops to the bottom in a spongy mass well shot through with the essential quantity of slag. The inventor of this simple and novel technique is a member of the faculty of Carnegie Institute of Technology. His work was done under the auspices of the long-established A. M. Byers Co., which makes half the country's wrought iron pipe. So firmly does the Byers Co. believe in the Aston process that it has just completed a $12,000,000 plant in Pittsburgh to put it into big scale operation.

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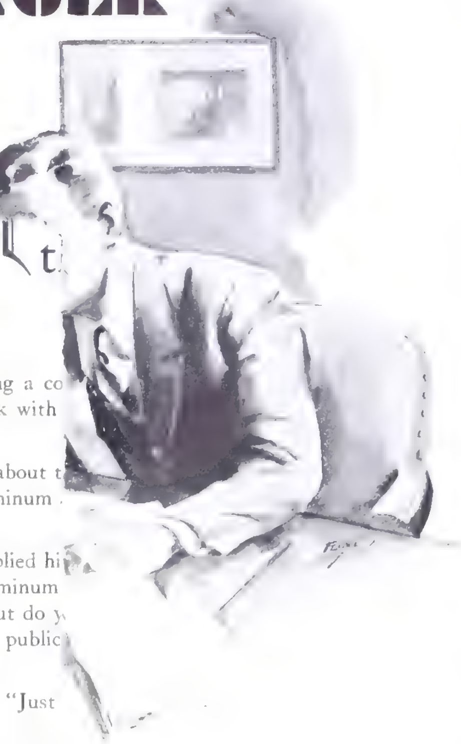
egan advertising this year

¶Colonel Procter, sixty-eight-year old head of Procter & Gamble, did not want to retire until he found a successor who would carry on his policies and expand the great soap-making business he had built up. His recent retirement from the presidency and the accession thereto of forty-five-year old Richard R. Deupree means that the Colonel has found his man. Mr. Deupree's rise to the presidency has been arduous, admirable, and undramatic. But this last is not quite true. There is one touch of drama. A portrait of Napoleon sits on his desk. "A fellow has got to have a plan of his life like Napoleon had," Mr. Deupree insists. Yet the curious fact is that Napoleon was a fatalist, a gambler who believed only in his star. With this erroneous idea of

[*Continued on page 108*]

SLOW DOWN
LIVE LONGER

sound advice
from a
famous



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or *White Star Line* is a mar-
with bracing salt air—puts
new luster in dull — —sharpens jaded appetites—gives
men new zest for work—adds years to their span of life.

Do you feel rusty . . . played out? Let us tell you about
our winter cruises—ideal for tired business men.

MEDITERRANEAN—Four de luxe 46-day Cruises by *White Star* liners ***Britannic*** (new) and ***Adriatic.*** Jan. 8 and 17, Feb. 26, Mar. 7. Holy Land, Egypt and other points of principal tourist interest. $695-$750 up, First Class—$420 Tourist Third Cabin, both including shore program.

SEVENTH ANNUAL WORLD CRUISE of the ***Belgenland.*** Still time to join this "Cruise of Cruises," sailing from New York, Dec. 15; San Diego, Dec. 31; Los Angeles, Jan. 2; San Francisco, Jan. 4. ***Red Star Line*** in cooperation with American Express Company. $1,750 up (133 days), including shore excursions.

30 Principal Offices in the United States and Canada. Main Office, No. 1 Broadway, New York City.
Authorized agents everywhere.

WHITE STAR LINE • RED STAR LINE
INTERNATIONAL MERCANTILE MARINE COMPANY

Career Milestones

[*Continued from page 107*]

Napoleon as an inspiration, Deupree in 1905 went into Cincinnati's largest firm, Procter & Gamble, as a $10-a-week clerk. In six years he made himself manager of the chip soap department; by 1917 he was general sales manager. Mr. Deupree is a self-made man, and more than that. In him tenacity of purpose amounts nearly to genius. With only an intermediate school education to rely on (whence perhaps his misconception of Napoleon), with a rebellious stomach and a head that is visited by terrific headaches, he has managed to achieve his by no means modest goal. A characteristic story is told of him. The first time he went on one of Colonel Procter's famed duck-hunting trips, he scarcely bagged a single bird. He came back and earnestly took up trap-shooting. The next time he went hunting with the Colonel he did not miss.

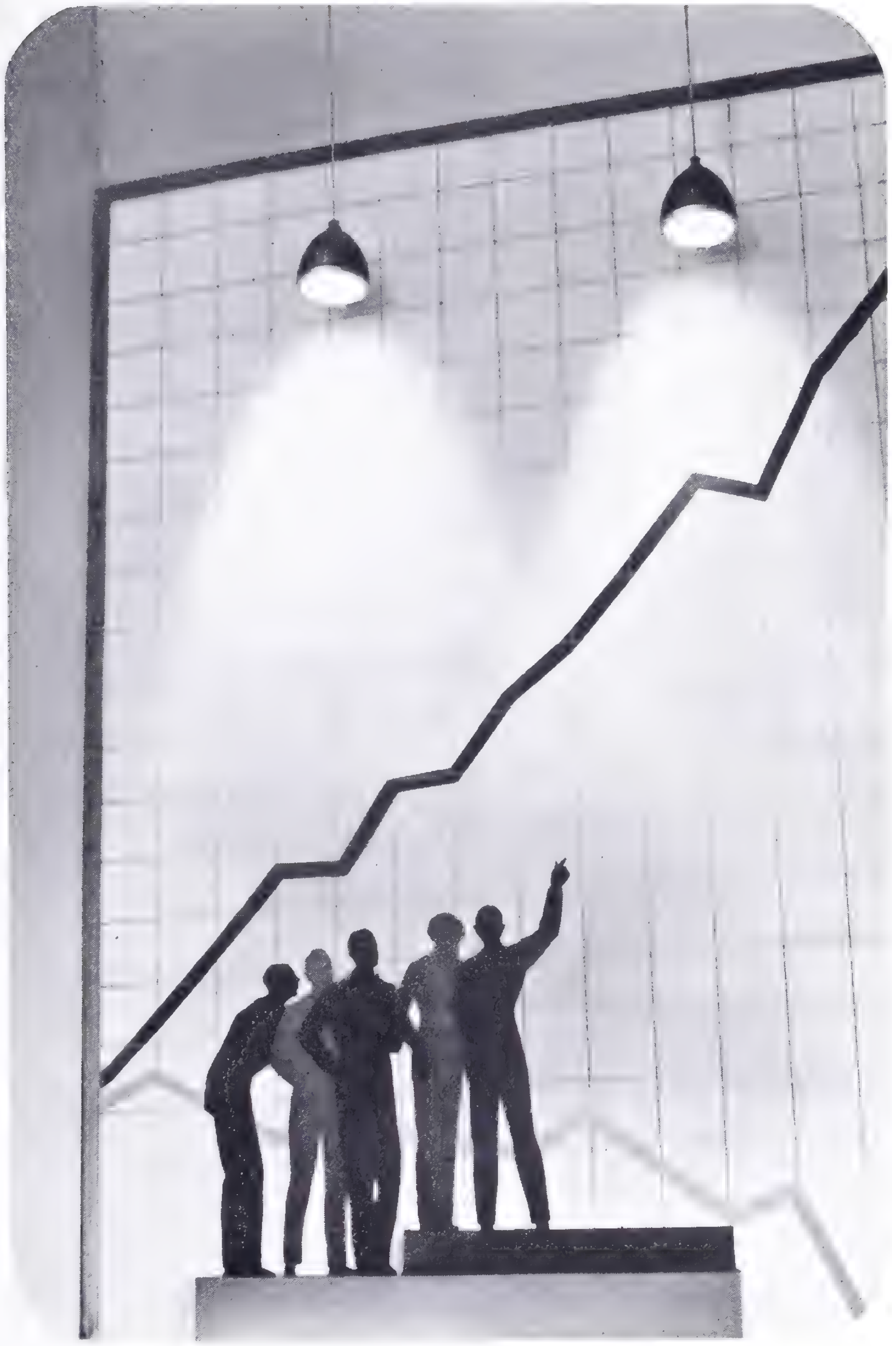
¶Most people have heard of Jeritza, Argentina, Galli-Curci, Zimbalist. Most people have not heard of Milton Diamond, under whose ægis from now on these and many another resplendent artist will perform. Mr. Diamond has been made czar of the concert industry. As president of Producing Music Managers Association, Inc., he leads a group of important managers who are said to control most of the country's concert bookings. To an interviewer he begins without preamble: "You certainly want to know my age. I'm forty." Mr. Diamond is no concert manager. He is a smart and extremely energetic lawyer whose first job was answering the telephone in the office of a Congressman Goldfogle. In 1910 he was admitted to the New York bar, an event of which he relates that he was among the 91 who passed out of 700 who took the examination and that he took forty minutes to answer a set of questions for which three hours were allowed.

¶At the age of thirty-seven, Lester North Selig comes to the presidency of General American Tank Car Corporation—not exactly unexpectedly, for he is the brother-in-law of Max Epstein, who founded the business with five tank cars. Young Selig's predecessor as G.A.T.C. president was Elias Mayer, who retired with the remark that he wanted to die with his slippers, not his boots, on. As every shipping man knows, there are few more prosperous transportation agencies than G.A.T.C., whose 1930 earnings are expected to set a record of $9.00 a share. The operation of the company's fleet of 40,000 freight cars will be no novelty to Mr. Selig, who has been through every department of the business from riveting underframes to accounting.

¶The Perkin Medal, awarded by five leading chemical societies for a lifetime of achievement in chemistry, is much coveted by all workers in the field. For 1931 it goes to Dr. Arthur Dehon Little, Bostonian chemist of parts who collects porcelains and writes for the *Atlantic* [FORTUNE, June, 1930]. An outstanding industrial chemist, he has done notable work in leather-tanning, wood pulp, petroleum, and artificial silk.

¶There can be no question as to who is running the Missouri-Kansas-Texas (Katy) Railroad. Michael Harrison Cahill is the man. To the posts of chairman of the board and chairman of the executive committee which he already holds, he has added the presidency. Mr. Cahill's monopoly of the Katy's executive offices is all the more remarkable in that he only joined the road in 1928. Before that he was operating vice president of the Seaboard Air Line. Like Atterbury, Crowley, Loree, and many another major rail executive, Mr. Cahill has been a railroader all his life, from the time he got a job as clerk with the Baltimore & Ohio up to the present. His method of running a railroad is to "live on the line" as much as possible. The Seaboard brakemen and engineers liked tall, florid, genial "Mike" Cahill, who more than once dropped in on their parties and barbecues, there to indulge in a favorite diversion of his: dancing. Mr. Cahill announces that the Katy's preferred dividend for 1930 will be amply covered.

Even in periods of business depression certain Companies FORGE *AHEAD*



THE REPORT of a large New York bank on the net profits of 550 industrial corporations for the first half of 1930 shows an average drop of 30.4%.

However, all corporations in the same line of business are not faring equally. All are not down.

Occasionally you hear of a company that is faring better than average—rarely of one that is said to be AHEAD. What are the facts?

In our own experience the facts may be interesting:

Of our clients manufacturing or distributing food products, a comparison with 1929 reveals that 85% are AHEAD.

In the baking field, although the industry as a whole is reported 14.3% off, our clients are *all* AHEAD.

Our clients in the drug field are AHEAD from 8% to 38%. One which began advertising this year in a highly competitive line is 105% AHEAD.

Third-quarter reports for these companies continue to be impressively favorable, with indications that the last quarter will be no exception to the trend.

The figures reveal that of all clients whose sales positions are reasonably dependent upon advertising:

75% are AHEAD of 1929 positions
87.5% are AHEAD of 1928 positions

J. WALTER THOMPSON Company

NEW YORK CHICAGO ST. LOUIS BOSTON CINCINNATI SAN FRANCISCO LOS ANGELES
MONTREAL LONDON PARIS MADRID BERLIN STOCKHOLM COPENHAGEN
ANTWERP WARSAW ALEXANDRIA PORT ELIZABETH BUENOS AIRES SAO PAULO
BOMBAY MELBOURNE SYDNEY BATAVIA WELLINGTON

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Marshall Field & Co. 104 May
Macy, R. H. & Co 82 May
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Morton Salt Co 52 Aug
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Spalding, A. G., & Bros. 62 Aug
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Standard Oil Co. of New York, merger 94 Sep
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Utah Copper Co. 71 Apr
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Warner Bros., and color movies 127 Oct
Western Electric Co., and A. T. & T. 38 Sep

Subscribers may obtain a complete index on request.

NO!

NO MORE DELIVERIES UNTIL NEXT FALL!

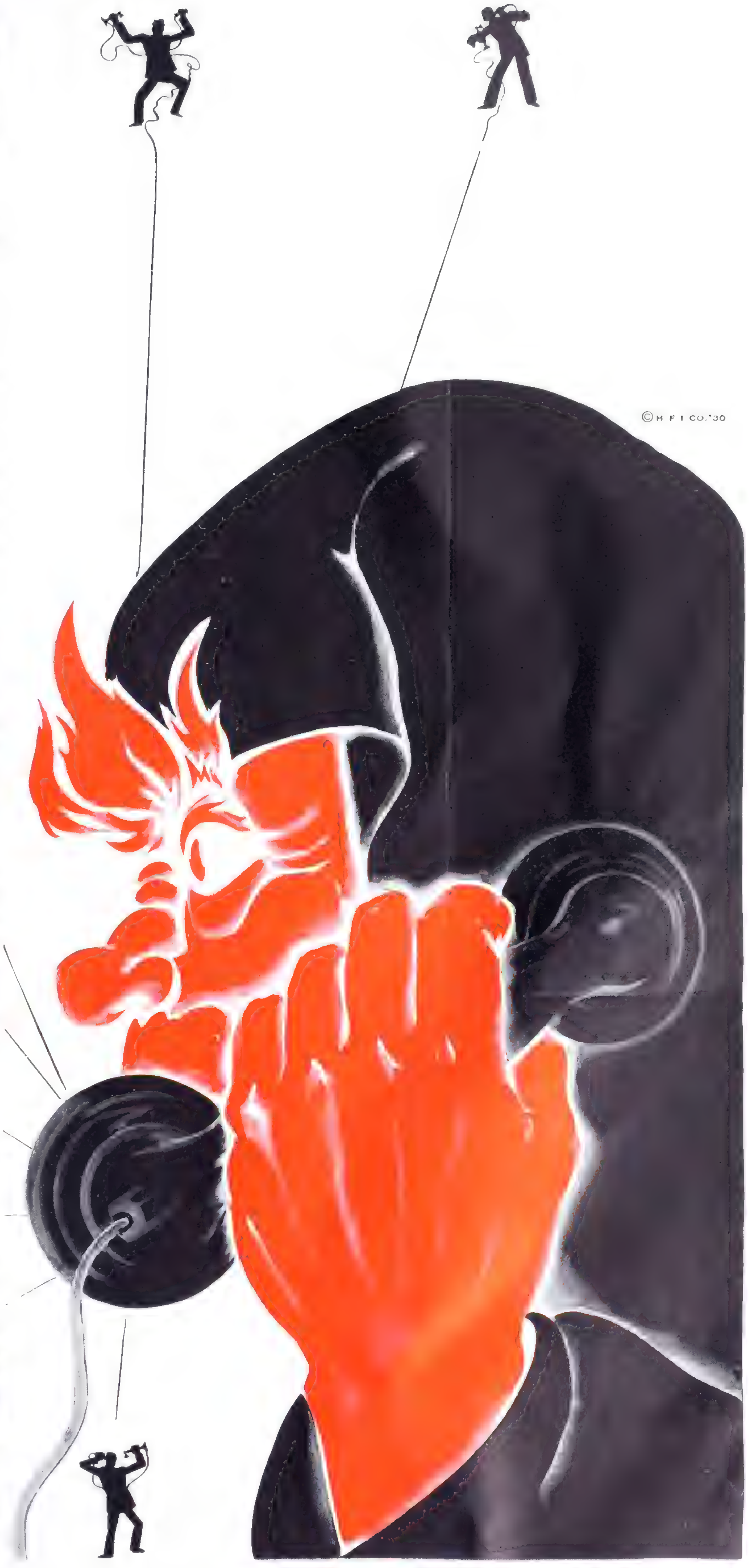
Suppose Fire put your factory out of business for a year — beginning tomorrow. Would your customers shut up shop and wait for you to get running again? You know they wouldn't. They'd *have* to buy from your competitors. Competitors' salesmen, getting a foothold in your pet sales territory—that's what it would mean.

Fire insurance will restore your destroyed property. But it won't produce goods and it won't prevent your salesmen from going to competitors —and taking with them the good will of their respective territories.

When fire touches business its destruction is far reaching. You should think beyond the mere loss of your physical property — to the possible loss of your business itself. There is ample protection against this. Find out about it.

Just reach for the nearest 'phone and call the Hartford agent*. He'll show you how Business Interruption Insurance can step in and produce business income — while your property is being rebuilt.

Is there anything more important you could think of to do— right now?



©H F I CO.'30

THE

HARTFORD FIRE INSURANCE CO.

AND THE

HARTFORD ACCIDENT AND INDEMNITY COMPANY

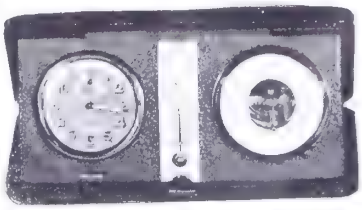
WRITE PRACTICALLY EVERY FORM OF INSURANCE EXCEPT LIFE

*If you do not know the name of the Hartford agent look under "Hartford" in your telephone book. If he isn't listed write the Hartford Fire Insurance Company, Hartford, Connecticut.

CHRISTMAS SUGGESTIONS

$25.00 to $65.00

$35.00



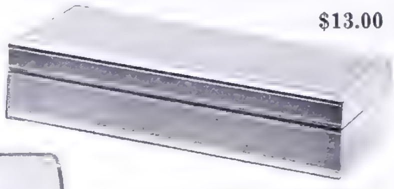
ESTABLISHED 1818.

$26.00

$25.00

Others $5.00 to $40.00

$13.00



Others $4.50 to $92.00

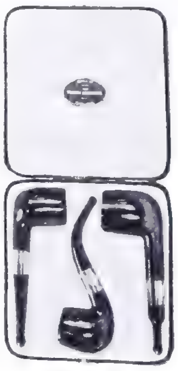
$29.00
Others
$23.00 to $110.00

Brooks Brothers,

CLOTHING,

Gentlemen's Furnishing Goods,

MADISON AVENUE COR. FORTY-FOURTH STREET
NEW YORK

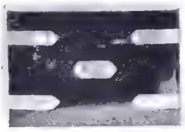


$24.00
Others $14.00 to $45.00
Pipes, singly
$5.00 to $20.00

$25.00 to $28.00
Others $9.50 to $28.00

$275.00, Others $350.00 & $385.00

$16.00
Others $16.00 to $210.00



$50.00
Others $1.75 to $58.00

$52.00
Others $4.00 to $52.00

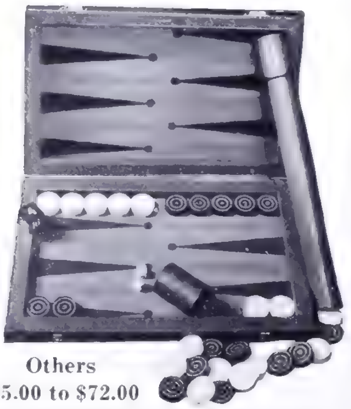
$10.00 to $37.00

$250.00
Others $115.00 to $525.00

$83.00
Others $30.00 to $127.00

$65.00
Others
$18.00 to $122.00

$55.00, Others $20.00 to $150.00



$50.00
Others
$25.00 to $72.00

BRANCH STORES
BOSTON
NEWBURY CORNER OF BERKELEY STREET
NEWPORT PALM BEACH

Radio Advertising

[*Continued from page 69*]

ite of the fact that the Davey mpany, in emphatically a lux- y field, anticipated as much as 25 per cent decrease in present pressed times. What presum- ly happened was that people no were interested in trees liked hear Mr. Davey talk about em, and people who were not terested in trees were no use to r. Davey anyhow. In other ords, Mr. Davey got into his ogram a *selectivity* very unusual radio and opening up a fertile ssibility for other advertisers th the same selective appeal.

There remain two classes of vertisers who will find radio oadcasting particularly diffi- lt. In the first place, there is e advertiser whose product most inevitably requires a long, raight, reason-why selling argu- ent. The Hudson Motor Car ompany, for example, believes should "not only detail the any refinements and intrinsic uality of their products, but also ow just how it is possible to uild this quality and sell it at e price," and that "the com- ny could not get its story ross without infringing on the tertainment purchasers of ra- o are entitled to expect." A mewhat different aspect of the me limitation is found in the anufacturer who does not deal rectly with the public and ith whom price is an extremely tal factor. The Crane Co. lumbing) argues that "be- veen the public and ourselves the plumbing and heating ntractor," and that "all of the dio advertising in the world is ot going to convince him that should buy Crane products hen he can save a ten-cent ece by buying another manu- cturer's line." The manufac- rer who must tell a detailed ory or the manufacturer who akes little direct consumer con- ct is the manufacturer who ill find in radio its greatest aste and its least result.

• • •

After all, radio advertising is dvertising, and the advertiser ho talks weekly to several mil- on people must be extremely nept if he cannot leave them vell disposed toward his com- any and its products. Criticism f broadcast advertising is prop- rly based not so much on scepticism as to what happens after the broadcaster has located his audience as on the difficulty of locating such an audience as the radio enthusiast so glibly visualizes. Furthermore, as far as the national network advertiser is concerned, it is becoming constantly more difficult to secure a satisfactory hour, particularly since the network operators themselves own only a few of their stations and have to make individual arrangements with all the others. Indeed, without discounting the services that National Broadcasting and Columbia have performed and are performing, it is fair to say that radio has grown to a position in which another chain is definitely required. Furthermore (in spite of the universal tendency to think of radio in terms of the two networks just mentioned), the looked for third chain is already developing in the form of the electrically transcribed broadcast and the advertiser's resulting opportunity to create his individual chain for his individual purposes.

The program broadcast via discs (i. e., records) has been until recently in ill repute, partly because of its association with early broadcasting days in which studios broadcast ordinary phonograph records and partly because many of the companies now engaged in electrical broadcasting are unreliable and unsatisfactory. The transcribed program is prepared and performed in exactly the same way as the direct program except that instead of being put immediately on the air it is first recorded on a disc, is then sent to the broadcasting station and is then released. It reproduces exactly like a talking picture, and (as with the talking picture) the outstanding manufacturer of its apparatus is the Western Electric Company. Now since the directly-broadcast program also goes out on the air in the form of an electrical impulse and is electrically received, there is theoretically no difference between the recorded program and the direct program, and the listener is altogether unable to distinguish between them. This theoretical identification is never quite realized (there is, for instance, the item of the surface noise of the record), and very often is so far from being realized that the results are extremely inadequate. On the other hand, however, such an exponent of the transcribed broadcast as Sound Studios of New York, Inc., and its associated World Broadcasting System have brought the recorded program to a very high level of excellence. Sound Studios (the only Western Electric licensee in its field) is handling the Chevrolet program, by far the most extensive program on the air. And the listener who should decry the Chevrolet broadcast as a recorded program is listening not so much with his ears as with his prejudices. The transcribed program, when properly made and properly broadcast, is an answer to many of the radio advertisers most serious problems.

For the disc program can be sent to any number of stations and can be broadcast at the best time available on each. It enables the advertiser to reach exactly the territory he wishes to cover. It permits him to select as many as he wishes of the country's 611 radio stations (except the few owned by networks and hence prohibiting discs and the ever increasing number which lack facilities for broadcasting electrical transcriptions), whether, like Chevrolet, he wishes a wider coverage than the networks can give him or whether, like the Nunnally candy company (operating chiefly in the South), he is interested in a regional distribution not centering in the northeast. The advertiser can also secure much better radio time. If he wants 9 P.M., he can take Monday on one station, Tuesday on a second, Wednesday on a third, and so forth, whereas with the direct program he must take the best time that the network can arrange simultaneously with all its stations. In short, he has a control of his broadcast possible through no other method.

Thus radio advances and develops. The forthcoming government census should make it possible for every radio advertiser to know exactly how many sets are in the territory he is covering. Meanwhile N. B. C. engineers, also not idle, are working on a wave length synchronization which may yet make it possible for several stations to use the same wave length at the same time. It is true that the radio advertiser may never know how many people are listening to his programs and buying his goods. But with how much more authority can he answer the same questions regarding that portion of his advertising which appears upon the printed page?

Tuesday, November 4, 1930

	WEAF	WABC
6:00	*Black and Gold Room Orchestra	*Harry Tucker and his Barclay Orchestra
6:30	*Who's Behind the Name?	*Crockett Mountaineers
6:45	*Black and Gold Room Orchestra	*Tony's Scrap Book
7:00	Air Scoops with Elinor Smith (Daggett & Ramsdell Co.)	*Columbia Educational Features
7:15	*Laws that Safeguard Society	Westchester County Salon Orchestra (Westchester Realty Board)
7:30	Soconyland Sketches (Standard Oil Co. of New York)	Wise Shoe Program (Wise Shoes, Inc.)
7:45		*The Early Book Worm—(Alexander Woolcott)
8:00	*Troika Bells	Blackstone Program (Waitt & Bond, Inc.)
8:15	*Snoop & Peep	
8:30	Florsheim Frolic (Florsheim Shoe Co.)	Kaltenborn Edits the News (S. W. Straus & Co.)
8:45		Premier Salad Dressers (Francis H. Leggett & Co.)
9:00	Eveready Program (National Carbon Co., Inc.)	Henry and George (Consolidated Cigar Co.)
9:30	Happy Wonder Bakers (Continental Baking Corp.)	Philco Symphony Concert (Philadelphia Storage Battery Co.)
10:00	Enna Jettick Songbird (Dunn & McCarthy Co.)	Graybar's Mr. and Mrs. (Graybar Electric Co.)
10:15	B. A. Rolfe and his Lucky Strike Dance Orchestra (American Tobacco Co.)	Paramount-Publix Radio Playhouse (Paramount-Publix Corp.)
11:00	*Mystery House	*Will Osborne and his Orchestra
11:15		*Columbia's Radio Column
11:30	*Vincent Lopez and his Hotel St. Regis Orchestra	*Mickey Alpert and his Orchestra from Boston
12:00	*Duke Ellington and his Cotton Club Orchestra	*Asbury Park Casino Orchestra
12:30	Jack Albin and his Hotel Pennsylvania Orchestra	*Nocturne—Ann Leaf at the Organ

**Sustaining program*

this wonderful
tonic bath
for the skin

after shaving
after bathing
after exercise

Splash a few sparkling drops on your face . . . and watch fatigue-lines vanish, feel new life come tingling back . . . Give your whole body a 30-second rubdown . . . and note how cramped muscles relax, how all your skin is smooth as cool silk . . . Shaving lotion, body freshener, toilet water — all in one: Pinaud's Lilac . . . The delicately pungent freshness of French lilacs — the tonic stimulus of essences imported from Pinaud's own Paris laboratories —this famous formula is one of the most luxurious toilet essentials in the world. Enjoy it today! Pinaud, Paris — New York.

National Broadcasting Company, Inc.

[*Continued from page 70*]

radio entertainment. There is an obvious connection between broadcasting and the sale of radio sets. And there is an equally obvious value in the public service aspect of N. B. C. as a counterbalance to Radio Corporation's preferred position in radio. Nearly all the radios manufactured in the U. S. are manufactured under patents controlled by Radio Corporation, and many and bitter are the opponents of the patent pooling which Radio Corporation undoubtedly represents. And N. B. C. is Radio Corporation's best answer to the monopoly indictment, which is one reason why N. B. C. converses so fluently on the radio art and especially on itself as performing an unselfish service of cultural value.

But the personnel of N. B. C. is largely a personnel of radio enthusiasts who were radio enthusiasts in radio's pre-commercial days. Mr. O. B. Hanson, manager of Plant Operation and Engineering, became interested in radio at the time of the *Titanic* disaster (1912), was radio operator on the *S. S. Stephano* when it was torpedoed in 1916, went with WEAF in its Telephone days (1922), and has been chief N. B. C. technician since the formation of the company. Miss Katherine Seymour, dean of N. B. C. continuity writers, graduated from Barnard, taught school, got a job with the Telephone Company, and was sent down to WEAF because no telephone position was open. Here she was hostess, pianist, clerk, announcer, graduated into continuity writing after working under the late Roosevelt Clark usually considered Father of Continuity. On the announcing side, there is Mr. Milton Cross, who entered radio via choir singing, and Mr. Graham McNamee, who, during a recess of a jury on which he was serving, strolled casually into WEAF to see what radio was all about. Even among radio performers and notwithstanding the flood of outside talent which arrived after radio had established itself, N. B. C. is most proud of such performers as Jessica Dragonette, who deserted the musical comedy field after having sung the leading feminine rôles in the *Student Prince* and the *Grand Street Follies*, or Vaughn de Leath, original radio contralto, who invented the crooning technique because she began broadcasting in the days when radio tubes, which cost $110, were likely to be shattered by a full, high, soprano note.

Courtesy N. B. C.

MISS KATHERINE SEYMOUR

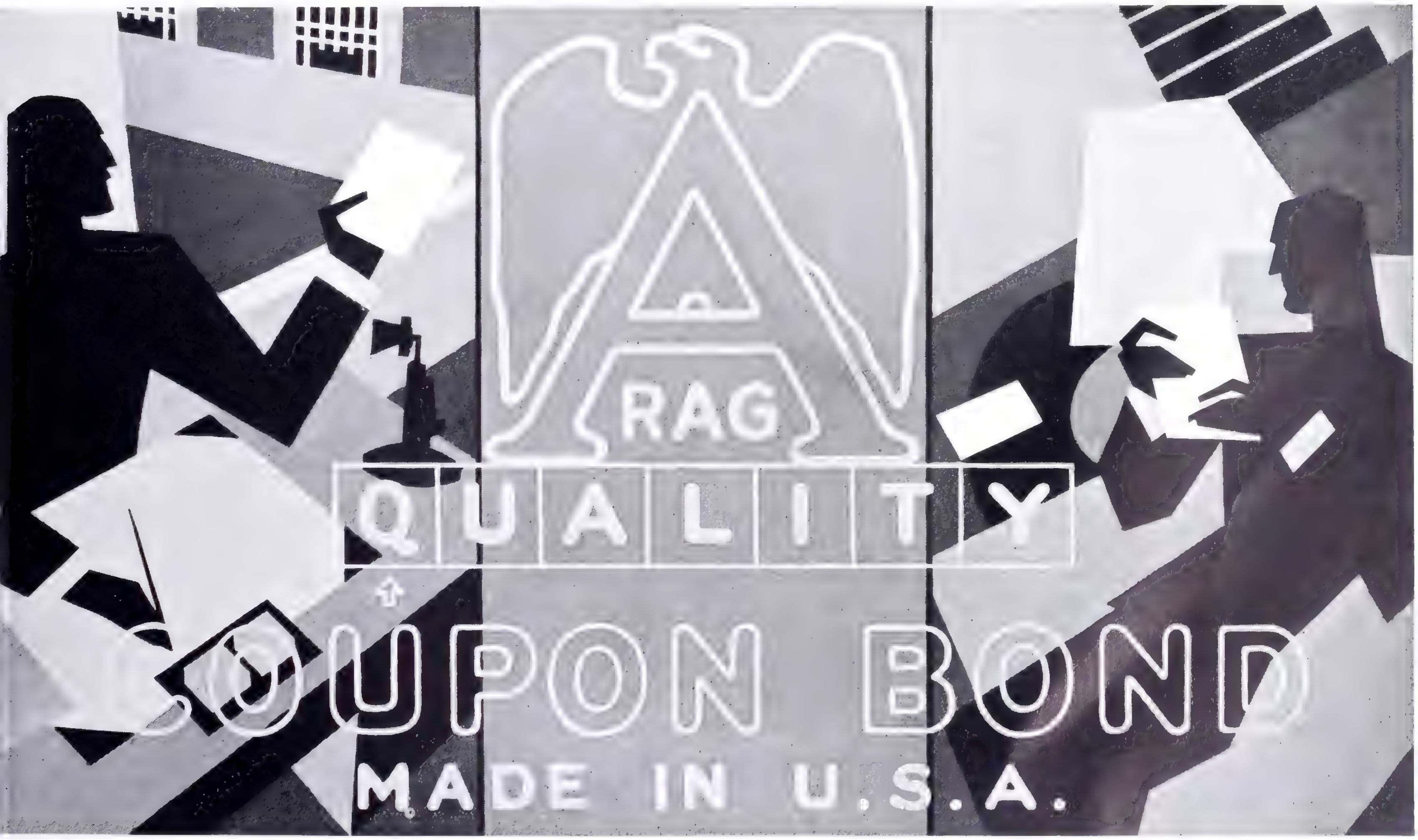
Given such a background, it is almost inevitable that N. B. C. should have acquired a possessive air concerning radio. Indeed, criticism of N. B. C. turns not so much upon its feeling that it knows a great deal about radio, but upon its apparently feeling that nobody else knows much of anything about it. Its attitude toward the advertising aspect of radio has been already discussed, and however well justified its hostility toward sales talks in programs may be, no excuse exists for its tendency to overestimate the number of radios reached on its networks. Furthermore, although N. B. C.'s absolute prohibition of recorded programs on all stations it owns is explained on the basis that recorded programs are bad for the radio art, it is difficult to escape the impression that the objection to the records is more competitive than esthetic. N. B. C. is sincerely devoted to radio, provided radio is always thought of as bearing an N. B. C. label.

Nor does N. B. C. regard radio as merely "another musical instrument." Quoting M. H. Aylesworth, N. B. C. president, in his report for 1929: "I am impatient for the time when realization of the cultural importance of network broadcasting will cause our authors and composers to create new art forms suited to the audience it provides . . . Thus

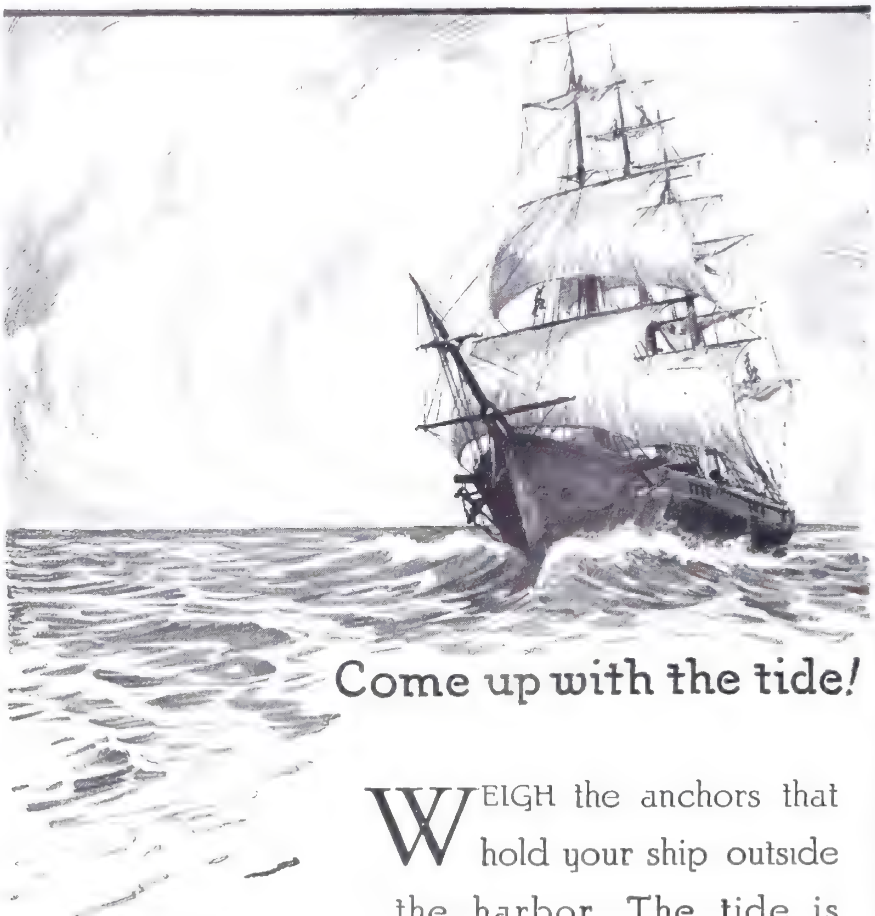
THE BANK DISCOVERS A POWERFUL BUILDER OF GOOD-WILL

• NO LONGER are bank executives cold, aloof igures, guarded by closed doors and supercilious secretaries. Their desks, today, are in plain sight, accessible to all. • In line vith this new policy, another instrument for the building of good-will has emerged. To each depositor of certain progressive banks here comes, once or twice a year, a letter from the office of the President. It is typewritten, and personally signed by the head of he bank. It outlines a service, states a policy, establishes a sense of close relationship and confidence. • To be successful, such etters must be genuine in every sense. It is significant that in many cases the background given them is the clean, crisp integrity f Coupon Bond—recognizable at a glance, at a touch, as worthy of respect. • It is chosen for the same qualities that have made it he executive stationery of business leaders throughout America. • Coupon Bond is a supreme achievement in paper making. It is nanufactured, 100 per cent, from strong, new rags. And its Eagle-A watermark is a nationally accepted symbol of excellence. •)ur portfolio, "The Modern Trend in Letterheads," and a new booklet, "The Executive Letter," will be sent you on request. (In vriting for them, please use your business stationery.) ℂ *Coupon Bond is but one paper in the Eagle-A Line of Bonds, Ledgers, Vritings, Index Bristols, Offsets, Covers, Book Papers, Mimeograph and Manifold Papers—the* right *paper for every business purpose.*

AMERICAN WRITING PAPER COMPANY, INCORPORATED
HOLYOKE, MASSACHUSETTS



EAGLE·A·PAPERS



Come up with the tide!

WEIGH the anchors that hold your ship outside the harbor. The tide is flowing in.

If there is work yet to be done in realigning your productive facilities, summon the Engineer so that he can speed up whatever is necessary in building, in mechanical reorganization, in power requirements or in other fields where his counsel and work can help you make more profit, better product or the same product for less.

Textile Mills
Reorganizations
Warehouses
Surveys
Rayon Plants
Tobacco Factories
Steam Plants
Examinations
Water Supplies
General Industrial Plants
Production Studies
Hydro-Electric Systems
Appraisals
Sanitary Engineering
Power Application & Lighting

J. E. SIRRINE & COMPANY
Engineers
Greenville South Carolina

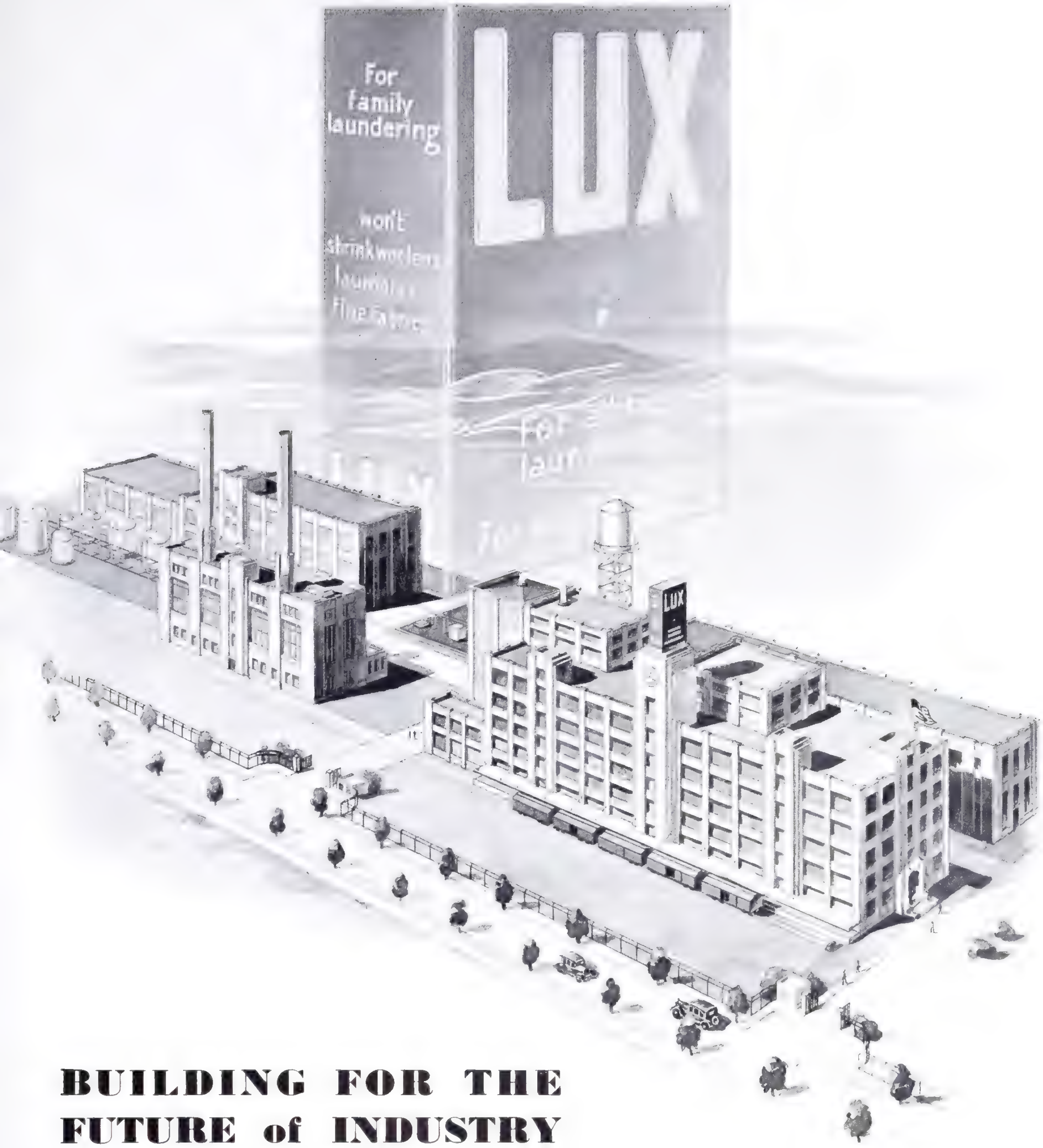
far we have created very little art designed primarily for the microphone . . . We have borrowed, and will continue to borrow, dramatic writings originally designed for the legitimate stage. But we must do more toward the creation of a dramatic literature of our own."

There may be such a thing as a generic radio drama. Thus far, however, the spoken radio word has been notably inferior to the musical portion of air entertainment, and the sponsors of the most extensive network programs have usually (and wisely) directed their program efforts toward getting bigger and better brass bands. N. B. C. seems inclined to labor under the delusion that people do nothing but sit cowlike by their radio sets. Advertisers know better and proceed to make programs to which people listen, art or no art.

One of the few members of the N. B. C. organization who derives neither from wireless nor from entertainment is its president, Merlin Hall Aylesworth. Mr. Aylesworth was born in Cedar Rapids, Iowa, and has celebrated his forty-fourth birthday. When he was only a year old, his parents moved to Colorado, where he grew up, graduated from the University of Denver, and practiced law in Fort Collins, Colorado. He next made the easy transition from law to politics, and from 1914 to 1918 was chairman of the Colorado Public Utilities Commission. He then shifted to the corporate side of the utility question, becoming head of the Utah Power & Light Co. Then, in 1919, he was appointed managing director of the National Electric Light Association, national headquarters for publicity from light and power sources. When (on November 15, 1926) National Broadcasting Company was organized, Mr. Aylesworth's experience with public relations plus his utility connections made him evidently qualified for the presidency of the new organization. Outstanding characteristic of Mr. Aylesworth is a quick-minded diplomacy which enables him to talk to everyone, say exactly what everyone likes to hear, and yet come away with his points well made and his ends well served. He is primarily N. B. C.'s congressman-at-large, its representative to the press, the public, and the politician. He does a great deal of traveling, makes many, many speeches, and is the most conspicuous exponent of radio's art and radio's cultural values. For these are the keynotes of the official radio story, and Mr. Aylesworth is radio's extremely conspicuous face.

One thing that Mr. Aylesworth has not done (or has not admitted doing) is make money. N. B. C. does not publish a detailed financial report, but does describe itself as a service organization not interested in profit. In 1929 it sold $11,000,000 worth of time. It received $2,500,000 for the sale of talent for broadcasting, $600,000 out of the sale of orchestras for broadcasting, and $750,000 for the sale of talent for purposes other than broadcasting. Its total income was therefore approximately $15,000,000. But 95 per cent of radio time is sold through agencies which collect a 15 per cent commission, and radio talent is sold through N. B. C. Artists Service, which collects an artist's service fee equivalent to 10 per cent. The American Telephone & Telegraph Company collected about $2,000,000 in 1929 for the use of telephone lines, and sustaining programs (non-sponsored and amounting to about two-thirds of all programs) cost $1,200,000. There are 1,200 employees to pay and six stations to maintain, and a multitude of miscellaneous expenses such as a yearly bill of $8,000 for tuning pianos. Thus N. B. C. reports that it expects to make no money, that it would put any profit that might be made back into the improvement of broadcasting, and that its Radio Corporation owner is satisfied with it as a creator and a guardian of radio popularity. Meanwhile, critics argue that N. B. C. would at least very much like to make money and that only the prevailing depression has kept it from a radical upward revision of its rates for radio time.

There are, therefore, two points of view on N. B. C. It may be regarded as altogether public-spirited, unselfish, and devoted to the best interests of radio. It has, on the other hand, been accused of feeling itself as all-powerful in the broadcasting field and even of being "drunk with power." It does rather overstress its altruistic aspects, although that is a failing common to all public utilities. And it is, humanly enough, unable to realize that the radio child which it has so well taken care of has now grown to a point at which even its parent cannot continue to exercise an undisputed authority, an unrestricted control.



BUILDING FOR THE FUTURE of INDUSTRY

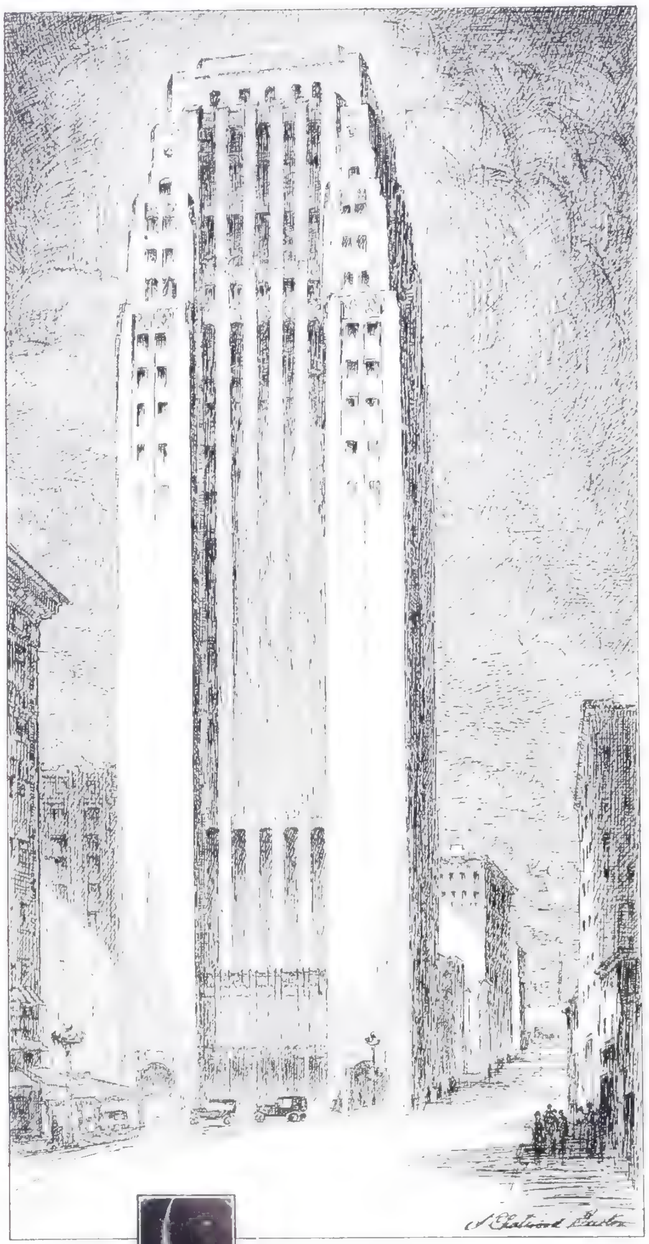
Lever Brothers Company has selected Stone & Webster Engineering Corporation four times to construct major developments. Most recent of these is the new plant at Hammond, Indiana, built from designs of Chas. T. Main, Inc.

Our flexible service is immediately available for any problem in modern building and engineering. We work from the plans of others as in this instance, or we will design and build the entire project.

STONE & WEBSTER ENGINEERING CORPORATION

A SUBSIDIARY OF STONE & WEBSTER, INCORPORATED

BUILDERS and ENGINEERS *For the* BUSINESS LEADERS of AMERICA



WHEN your Northwest resident manager selects an office in The Rand Tower, Minneapolis, he gains distinct advantages . . . well designed floor space, a location in the center of the Northwest's business capital, and an address of recognized value. These advantages he will translate into greater efficiency — time saving and increased productiveness.

THE **RAND TOWER** MINNEAPOLIS

The Rand Holding Company, a unit of the Rand Companies

I. T. & T. Ends a Brilliant Decade

[*Continued from page 43*]

in the trade papers and stirs its agents to special efforts. The florists have responded with about $100,000 additional business this year, turning a 70-30 advantage for Western Union into a 60-40 lead for Postal. This is smart merchandising, and it is being carried into the most unexpected corners of industry. Postal is trying to convince companies with large sales forces (such as Fuller Brush) to have their men in the field report each night by telegram. National advertising by telegram is another Postal goal. A move which Western Union *had* to copy was the Postal hook-up with the Standard Oil group, establishing 3,500 telegraph offices in as many gas service stations scattered through the marketing territories of the S. O. companies (New Jersey, Ohio, Kansas, California, Indiana, etc.), which can be expanded to cover the total 70,000 stations of these companies. This was no sudden, happy inspiration; it proceeded directly from the chief thesis behind all recent Postal activity, i.e., that the telegraph should be made available to the public, as available and as familiar as the telephone. Latest Postal move is the metamorphosis of its New York offices into Theatre Ticket agencies, a move which has its difficulties, but will certainly increase Postal traffic.

. . .

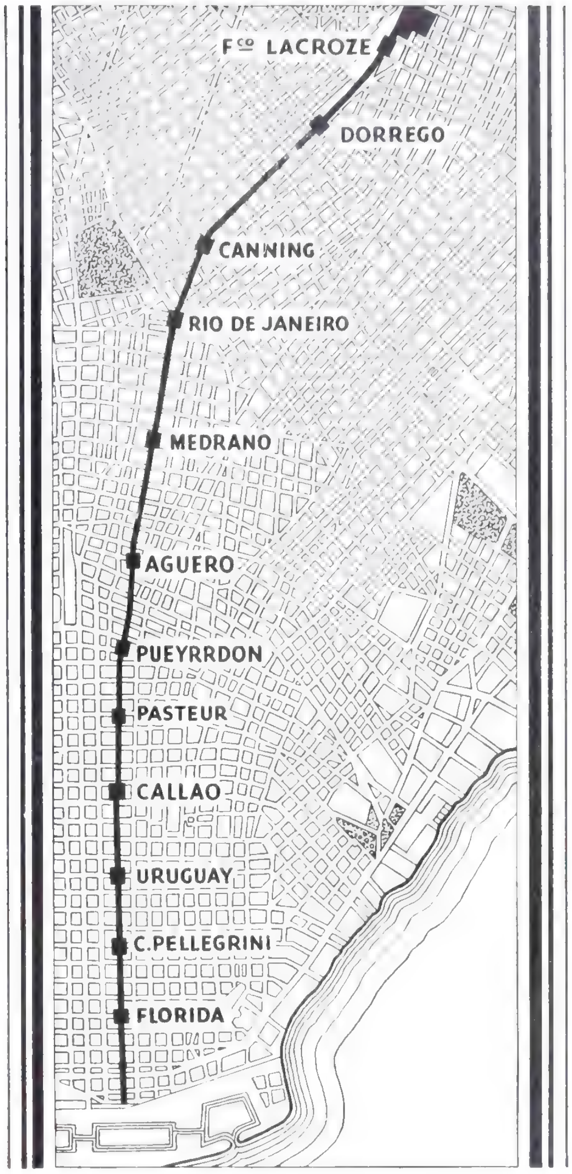
Hurdles in the path of this scheme are many. One is the psychological barrier erected by the ten-word limit. The Chicago executive who thinks nothing of lifting his telephone speaker and calling San Francisco yet tries to keep his telegrams within the fateful ten words. Rate schedules are now being very carefully studied, and the ten-word taboo may disappear as completely as Spain's thirty-minute limit.

But the most serious hurdle and the problem which is at the heart of the domestic telegraph situation is the competition between Postal and Western Union. It is permissible to debate the merits of the competitive *development* of the telegraph as against the monopolistic development of the telephones, but the inefficiency of that competition today is obvious to everyone—even to the principal cause of its continued existence, Mr. Newcomb Carlton. Postal's regeneration ha already brought it from a 17 per cent company to a 19 per cent company, and the high state of its 1930 vigor has kept its depression loss down to 6 per cent of 1929 business, while Western Union is off 9 per cent. Gratifying as this is, both as record and as portent, yet the fact remains that a 6 per cent decline wipes out the margin of Postal's revenue available for dividends on the common stock.

Duplication between the two systems already costs millions and in prospect costs tens of millions. Example of current waste: a duplicate rent bill of $1,000,000 a year in New York City alone. Example of prospective waste: the $70,000,000 printer exchange. Every telegraph man agrees that there should be and will be a printer exchange. It will mean that these long-distance typewriters, which now connect your Cleveland (or Boston) office with your Detroit (or New Orleans) office and also link your office with the company's telegraph and cable dispatching offices, will be interconnected with each other all across the country and, eventually, through Europe and South America as well. Thus the exchange will plug you in to your advertising agency, to your bank and your lawyer and your customers and the sources of your raw materials and your friends in Europe and coffee headquarters in Santos. A typist will pound out your orders, your directions, your questions, and the record will be both in your files and in the files of the office at the other end of the wire. As will be the records of that office's acknowledgments and answers.

Such an installation will cost somewhere around $70,000,000, which is a sizable investment. Neither Postal nor Western Union is willing to make it. For when one starts, the other must follow or go out of business, and the absurdity of having *two* printer exchanges could be matched only by the absurdity of having *two* U. S. mail systems, one of which included Minneapolis and Camden, the other St. Paul and Philadelphia. So, faced with the dilemma, the companies make plans on paper and content themselves by feverishly installing free printers to connect with

First modern subway
in South America
built in 21 months



Five-mile, double-track system at Buenos Aires built and financed by American companies

THE new Lacroze Subway at Buenos Aires—the first modern high-speed system in South America — was placed in operation October 18th by the Ferrocarril Terminal Central de Buenos Aires.

American bankers financed the project; American engineers designed, built and equipped it—complete and ready to operate.

Construction, involving both open cut and tunnel work, was completed in 21 months—a speed record for large undertakings anywhere. Three thousand men were employed, with 32 different languages represented—an indication of the administration problem.

Through our organizations in Buenos Aires and Rio de Janeiro we are prepared to execute engineering and construction assignments of any character in any part of South America.

Our services are equally available for work anywhere in this country, Canada and Europe — industrial plants, steam and hydro-electric power developments, transportation systems, monumental buildings.

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MAXIMUM RETURN TO CLIENTS PER DOLLAR INVESTED their own offices. Thus an enterprising New York office could today get itself six printers, from Western Union, Postal, RCA, and A. T. & T. Costs of installation to the four companies would total $3,000, but for only one (the A. T. & T. intra-office printer) need the customer pay a cent.

Emphasis is here laid upon the telegraph rather than the cable systems, for the underwater competitive situation is complicated by the real threat of Britain's Cable & Wireless combination. In the telegraph field, competition has become ruinously expensive and a real barrier to progress. Mr. Carlton, whose feeling toward Western Union is distinctly patriarchal in character, has greeted all talk of consolidation with bluff, abrupt opposition. This, and not the restraining White Act, is the real reason why a single U. S. telegraph and cable system is not nearer realization today. "Not," observes Mr. Carlton, "till I die."

Mr. Carlton is only sixty-one, and a very hearty gentleman indeed. In the meantime, the new and aggressive Postal is cutting into his business and his prestige. With the return of normal activity, Postal will begin to make money again and pull a vigorous oar for the I. T. & T. boat.

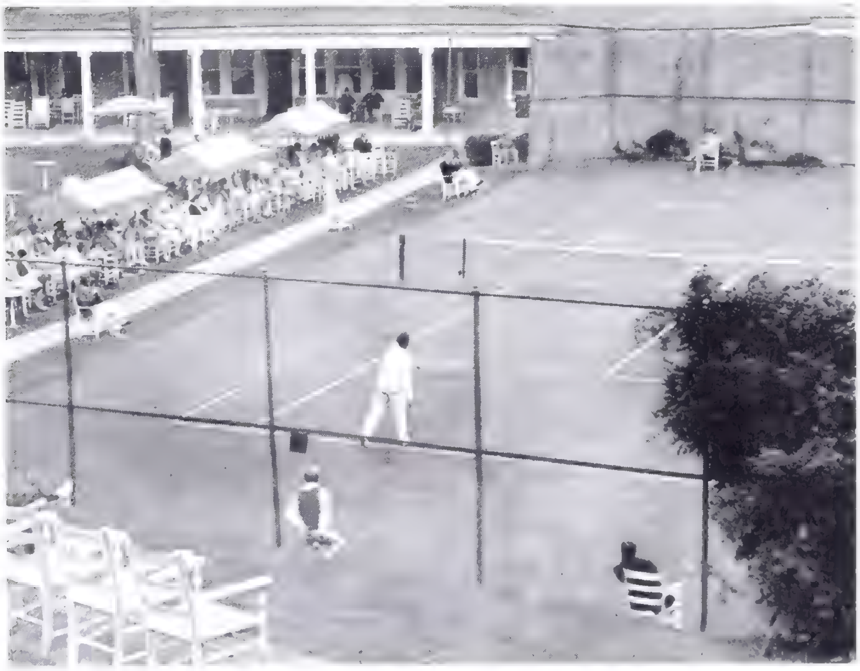
. . .

Looking at Spain and observing the success of that large telephonic enterprise, noting the rejuvenation of Postal, it is apparent that the glitter of I. T. & T.'s record is by no means all on the surface. The Behns have not only eaten largely and very rapidly; they are also digesting their food. Clear evidence of digestion is to be found in Spain, in Postal, and in the factories of International Standard Electric. I. T. & T., which became a manufacturer almost by accident, now owes the bulk of its revenues to this aspect of its world plan. Sales of $32,500,000 in 1925, when the Behns bought International Western (later Standard) Electric, in 1930 will climb above $70,000,000. And nearly half this increase has come from internal development, not from the mere purchase of going businesses.

Now this is not to say that I. T. & T.'s rate of growth has been ideal. Manifestly 1930 would have been an easier year if expansion could have been financed out of earnings. But the hammer-like strokes with which the Behns made the decade ring were not the results of either intoxication or whim. When a San Franciscan sets out to buy a country place, he may pick Burlingame, and then if he can't make a good deal in Burlingame, he may wander on to Menlo Park. But telephone systems are not often on the market, and if the Behns hadn't bought the United River Plate Company in 1928 they might never have had it. And they needed it. Not for their 1930 income account, to be sure, but to fill in the outline of their broad plans.

For the Behns have just started. They have a vision of world communications which many decades can scarcely realize. It may be outlined:

First of all, a unified modern South American telephone system. At the end of 1928, when the River Plate Company was bought, telephone development south of the U. S. border roughly paralleled U. S. conditions in 1895. There was less than one telephone for each 100 inhabitants, against the present U. S. quota of seventeen. Only a few months earlier, I. T. & T. had strung its highest-in-the-world telephone wires across the Andes to introduce Chile to the Argentine. Never, before 1928, had one South American capital spoken with another. The influence which modern telephone communication could have on internal trade is obvious and tremendous. Equally tremendous the I. T. & T. opportunity. Hence the Behn entrance into the A. B. C. countries; hence also their entrance into Peru and Uruguay. One large network, serving Rio and Sao Paolo, is linked with the local traction company, is owned by Canadians, and is not likely to join the I. T. & T. group. But some 55 per cent of South American telephones have already been brought into the system, and I. T. & T. is working at top speed to make this polyglot collection as efficient a communication unit as the new, compact network in



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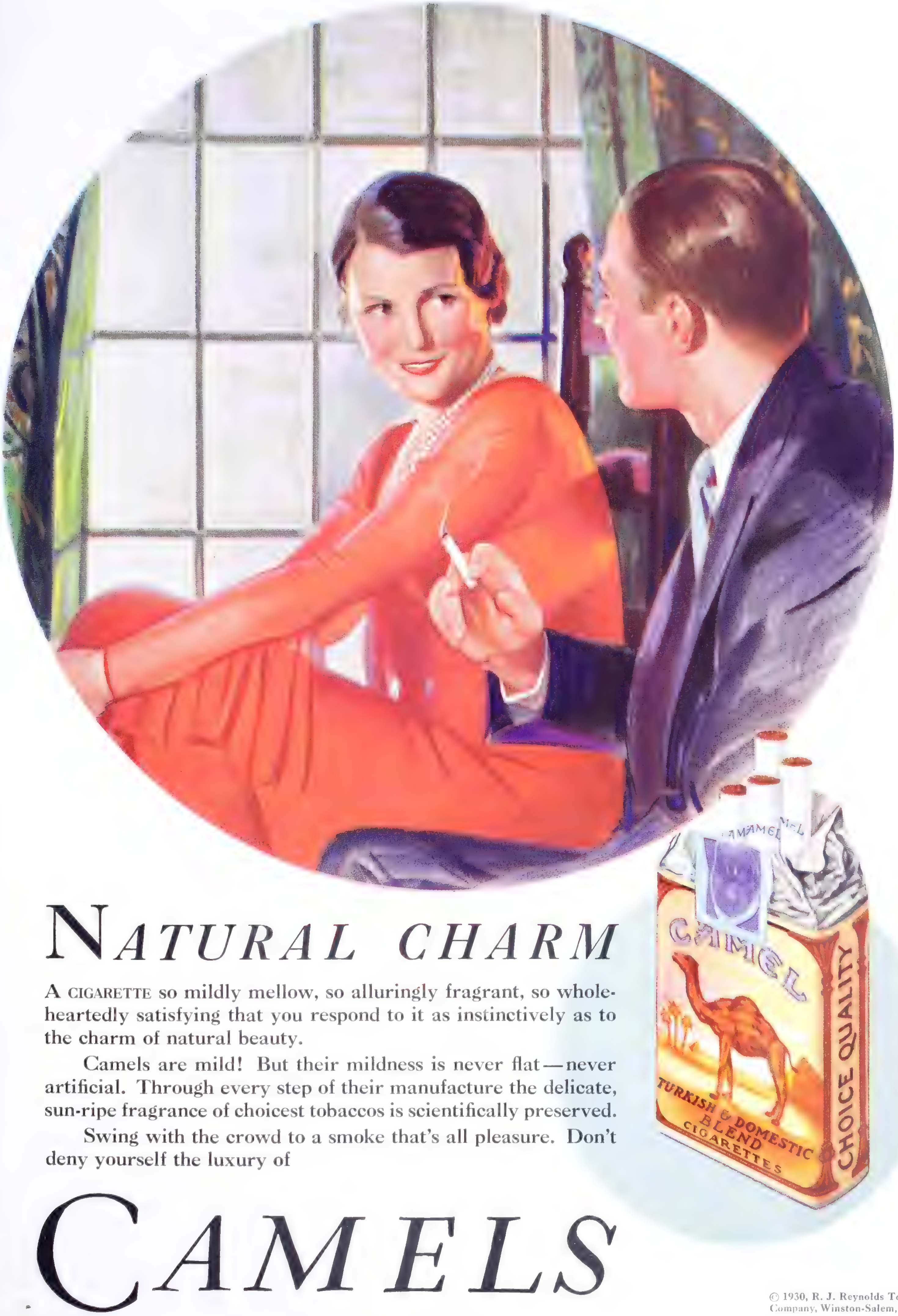
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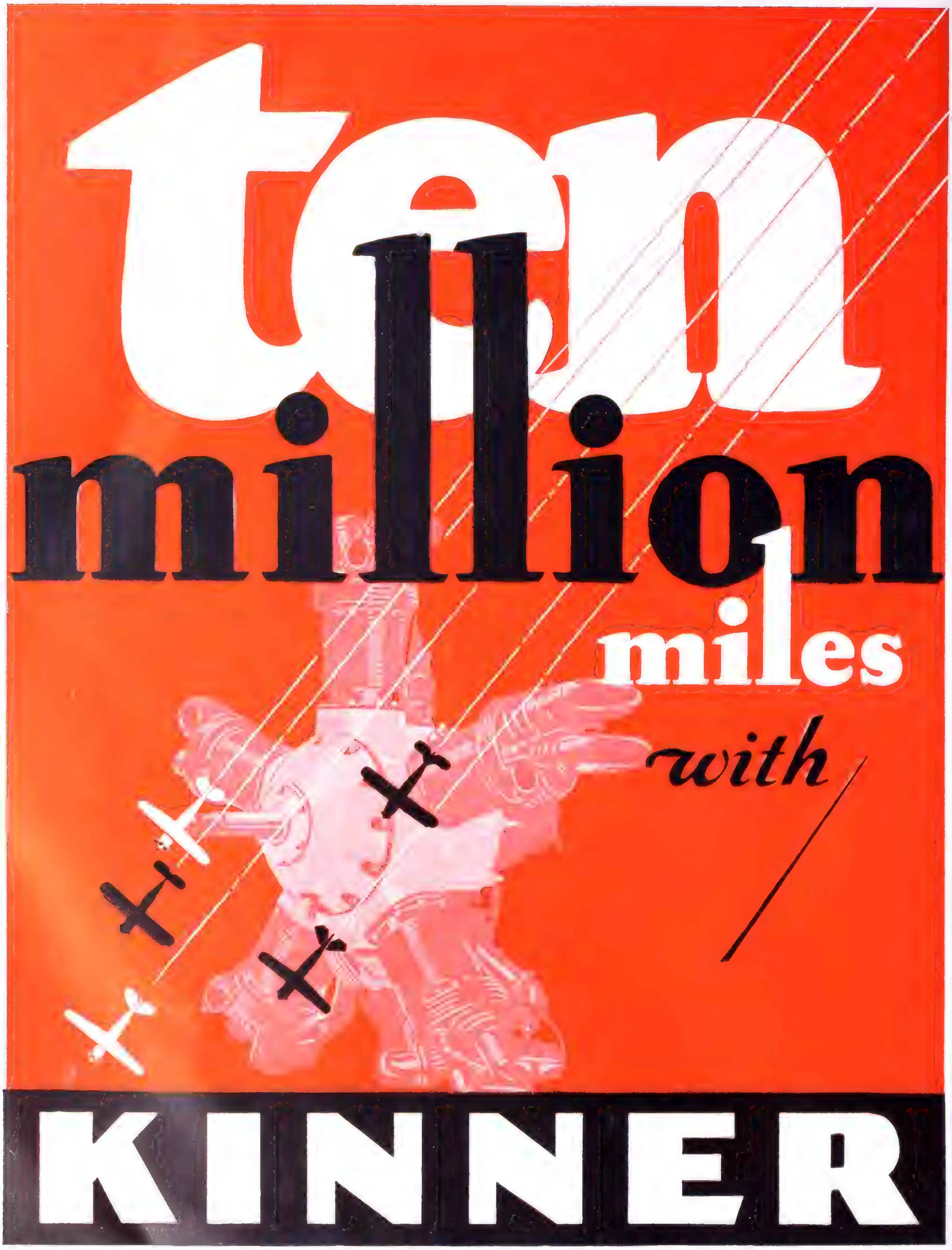

AIRCRAFT MOTORS

LESS than two years ago American aircraft manufacturers and buyers accepted the Kinner aircraft motor as the logical power-plant for two and three place open and closed type airplanes. ¶ In this brief period Kinner motors have flown a total of over *ten million* miles in service. ¶ Because of their dependability, smooth power and superior performance, Kinner motors have outsold all other aircraft power-plants of comparable horsepower, since 1928. ¶ Fly in a Kinner powered plane. You will find one practical and economical to own, conveniently priced from three to seven thousand dollars . . . 5 cyl. 100 h.p. . . . 5 cyl. 125 h.p. . . . 5 cyl. 210 h.p.

KINNER AIRPLANE AND MOTOR CORPORATION ◆ ◆ ◆ Glendale, California

Spain. Never deviating from the principle of nationalization, first formulated in Spain. Although U. S. capital and U. S. enterprise actually build the continental system, yet each company retains its nationality.

South America to be linked, via All America Cables, with the U. S. And through the U. S., with Europe. Here is a problem, and here is where Cables & Wireless, Ltd. rears its head. For this young British merger, freed from the lazy, smothering paternalism of the old British post office regime, has very vigorous ideas about control of world communications and about trade following cable and radio routes. In the great British drive for South American trade supremacy, a drive which enlisted the able d'Abernon commission in 1929 and next spring will call upon the super-salesman Prince of Wales, Cables & Wireless, Ltd. plays a prominent part. Cable rates are vital factors in the placing of South American business, and a rate difference of one cent a word or a time difference of two seconds a message carries more weight than one might suspect. The time problem, I. T. &. T. (through its All America-Commercial hook-up) is more than able to meet. Although a message from Rio to London via I. T. & T. companies covers 11,000 miles, All America Cables will give the Rio businessman minute service. Cables & Wireless, with a 6,000 mile direct line between the same two cities, cannot better the guarantee. But the rate war is very much a problem. Last month, Cables & Wireless cut its South American rate by eight cents a word; I. T. & T. had no choice but to follow. The eventual British goal, which is fortunately unattainable, is to make the South American-London service actually cheaper than the South American-New York service, and thus move not only cable files but industry itself from American to British markets. I. T. & T. will, of course, not permit it, and Cables & Wireless will ruin itself if it insists.

Here, however, one begins to see the Behn plan in its full proportions. The South American telephones; the cable links with the U. S., Europe, and Asia; the radio telephone; the European factories and telephone systems; radio across the Pacific to Asia, where the profitable Shanghai telephone company also provides an outlet for the Chinese manufacturing unit, China Electric, and where I. T. & T. is in a position to build a South China system should that ever be possible and desirable; and, finally, the nerve-center of this living, vibrating organism in the U. S. This to be a unified telegraph service, if and when the government and the Western Union agree; until then, a constantly improving Postal company. This to be also a unified Radio service, when the government permits R. C. O. to accept 1,200,000 shares of I. T. & T. stock in return for its communications systems. At the moment of writing, the fate of the consolidation cause in Washington is still in doubt. But whatever the immediate issue of these efforts, the final result cannot be in doubt. An American communication system is certainly in the making, and, just as certainly, the Brothers Behn are making it.

A NOTE ON THE PESETA

The decline in the value of the peseta from 13.30 cents at the opening of the year to 9.50 cents last month focused attention on the difficulties which I. T. & T. has had in converting its foreign currency profits into gold dollars with which to pay American interest and dividends. Over a long range, I. T. & T. is protected on its investments in Spain as well as in other foreign countries by a provision which allows the company to make the stated rate of return on investments on the basis of gold dollar costs to the I. T. & T. Although foreign currencies may depreciate, this makes it possible to revise rates to restore the gold return on investments to a proper level.

One other protection of I. T. & T. is the wide diversification of its foreign commitments. There can be no doubt, however, that a major depreciation of currencies, such as occurred at the end of the War, would leave the I. T. & T. temporarily in an embarrassing position. Rate structures even under normal conditions are very difficult to adjust rapidly, and there may be a lag of several years between the actual depression of the foreign earnings in terms of gold and the first opportunity to restore them through changes in rate structures.

THE MAN WHO BUILT ST. PETER'S . . . ALSO DESIGNED A UNIFORM

Poet, painter, architect, and sculptor, Michael Angelo not only built St. Peter's, painted the Sistine Chapel, carved the Moses and the David—he designed the uniform of the Vatican Guards.

In the magnificent background he created for the Church, he knew the importance of every detail. Even the livery of a servant was worthy of his care.

Today Business is creating its background. Beauty is being used to increase prestige. Beautiful furniture and rugs are chosen for impressive offices. Even the quality of business stationery—the uniform of the letters—is not beneath the notice and care of progressive business men.

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Many important executives take care of the important detail of letter paper by simply specifying "Crane's Bond". They have found that every *letter on this* 100% new white *rag paper represents them with distinction.*

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New Western Electric Plant, now under construction at Point Breeze, Baltimore, adjoining the new Municipal Airport.

A *story* *of* BALTIMORE *the camera can't tell*

NOT so long ago, the Western Electric Company, in looking years ahead, saw its existing plants outdistanced by ever-growing needs. A new location was necessary; it might just as well be ideal.

Quietly a study was made. City after city and claim after claim were judged by the facts.

Baltimore was chosen. Chosen for her natural facilities—her understanding of industry—her citizens' willingness to get together.

For included in the ideal fixed, were seven physical requirements which Baltimore did not then meet. Unselfishly Baltimore's leaders, corporations and citizens got together—and *met* them.

Now Baltimore has the new Western Electric plant pictured in its splendid progress. Baltimore offers the same natural facilities and intelligent coöperation to any sound industry seeking an outstanding location.

And the Baltimore Trust Company, with its fingers on the pulse of business and industrial Baltimore, is ever at your service.

Write for our interesting booklet, Locate in Baltimore, *describing Baltimore's shipping and manufacturing facilities.*

BALTIMORE TRUST COMPANY
BALTIMORE · MARYLAND

MEMBER
FEDERAL
RESERVE
SYSTEM

The Cabinet of the Brothers Behn

(Continued from page 45)

The Conde was an intimate friend of Primo de Rivera, whose cordial support was at that time of the greatest assistance to the Behns. He had also followed his uncle as president of the Compania Transatlantica, operating as many as twenty liners and freighters between Spain and the Americas.

Conde de Guell belongs to the 1925 (Spanish) vintage. But 1926 did mark the appearance of a new and important group at the I. T. & T. table. This included Mr. George E. ("Ping") Pingree, who had been the boss of International Western Electric under A. T. & T. management, and was to remain its boss under the new name of International Standard Electric and the new management of the Behns. And as the purchase of this huge manufacturing enterprise had brought J. P. Morgan & Co. into the I. T. & T. picture, it surprised no one, in 1926, to find two Morgan partners on the board. One of these, of course, was Russell C. Leffingwell, the expert on international finance who had come to Morgan three years earlier, the other was Arthur Anderson. These Morgan men represented the first new financial interest since the arrival of Cutler and Bellamy. The relations of the various banking houses had been thoroughly worked out, however, and neither E. B. Smith & Co. nor Dominick & Dominick lost the position they had so shrewdly won. In this year, there came to the board a new face to many, but an old friend of the Behns—Mr. Wolcott H. Pitkin, one-time Attorney General of Porto Rico and a most able lawyer. A quiet, deliberate man, close adviser to the Behns, Mr. Pitkin's prestige in the company has steadily grown.

The next group to find seats at the table came directly from All-America Cables, which had been added to the I. T. & T. system in 1926. W. Emlen Roosevelt headed this group, and with him was that persistent social crusader, Mr. R. Fulton Cutting. Last year, when Mr. Roosevelt died, Mr. Cutting became chairman of All-America. From behind his great beard have come, upon occasion, rather startling remarks. One such was his last winter's pronouncement, as president of the trustees of Cooper Union, in favor of "some sort of unemployment dole." In this year, together with Messrs. Roosevelt and Cutting, the board table received I. T. & T.'s secretary, Mr. Logan N. Rock; and one of the most active of Wall Street's corporation lawyers, Mr. Lansing P. Reed, who follows Mr. Gardiner in rank at Davis, Polk, Wardwell, Gardiner & Reed.

Last of all to the I. T. & T. table there advanced, in the sprightliest possible manner, a trim, dapper gentleman who is the most puzzling phenomenon in Wall Street. It is perfectly easy to say that Mr. Clarence Hungerford Mackay is a charming, accomplished dilettante. Stemming from that rough and lucky miner, old John W. Mackay, and the proud woman who was his wife, Clarence Mackay was far from rough and had no need to be ambitious. He was and is one of the best squash-tennis players in the world. His peerless collection of medieval armor (which requires the constant services of one man plus silver polish) is internationally admired and envied. He is the godfather of the Philharmonic Orchestra in New York. Yet Mr. Mackay is deeply attached to that country from which he sprang—the graceless, dirt-rich hills of Nevada. That state will never again enjoy such a benefactor as Mr. Mackay. He supports its university; last month he opened its school of mines. Debonair as he is, his dilettantism surprisingly extends to those homely roots which are not usually remembered on Long Island.

In the offices of the Postal Telegraph Co., Mr. Mackay is at once the armor-collector and something altogether different. He is casual, unpredictable, often inconsequential. But there is not a man in I. T. & T.'s great building at Broad and Beaver streets who does not like him, listen to him, and become increasingly loyal to him. And there is scarcely a door in downtown New York through which he cannot walk, unannounced and welcome. He built the Postal into a great company. Others are the executive chiefs today, but Mr. Mackay is very much there, very much needed, very much loved.

Savings begin at once with the installation of Lyon Steel Shelving in factory, warehouse or toolroom cording to carefully prepared plans. Such installations save space and time—speed service—create order—lessen istakes—simplify stock control and inventory taking. They are always up-to-date because Lyon Steel Shelving is standdized, interchangeable, adjustable, never wears out. From a single unit to thousands we can give you exceptional rvice—on steel shelving, cabinets, shop boxes and on a complete line of store fixtures—products that help cut costs in e storing and handling of goods. Write us about your requirements and let our engineers help you plan for definite savings. yon Metal Products, Incorporated, Aurora, Illinois.

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THIS bank—the Old Kent — trusted counselor to Grand Rapids industrial life for 77 years, will be glad to demonstrate the fact that Grand Rapids possesses definite and unusual advantages which will result in bigger annual profits. A letter will bring you convincing proof.

OLD KENT BANK

West Michigan's Largest

Story of An American Photographer

[*Continued from page 89*]

Lloyd docks appear on these pages.

In Berlin, the studios of UFA and the many plants, ringing the city, of the Allgemeine Elektricitaets - Gesellschaft, the great electrical equipment company over which ruled Dr. Emil Rathenau. In Berlin, too, day after day of conferences with officials of the Dye Trust (I. G. Farben). Not only had no photographer ever been admitted to the synthetic nitrogen plant at Leuna, but no woman on any errand had passed through its barred gates. At length the way was cleared, and late in July Miss Bourke-White took the series which illustrated the article on nitrogen in the October issue of FORTUNE.

In all, Miss Bourke-White took more than 300 photographs of industrial Germany. They constitute the most important illustrative record yet made of that nation's post-War recovery.

If there were any discomforts during her subsequent inspection of Russia, it was no fault of the Soviet Government. She was provided with a sheaf of official papers nearly as large as her own collection of photographs. The commissar of railroads, M. Serebriakov, gave her power to summon a private train any time she chose. She photographed Colonel Cooper's dam across the Dnieper and again ventured into many plants which are today the most significant development of the new mechanized Russia. She was especially impressed with Russia's consuming interest and friendliness toward the U. S.

The extreme poverty of the country and the widespread hoarding of money, however, worked its hardships upon her as well as upon each and every native. There is an appalling and sometimes dangerous lack of food. Miss Bourke-White had guarded against this by bringing with her from Germany a trunk full of canned foods. But these rapidly disappeared, leaving only baked beans, on which she lived for an entire week.

Nor, because of the Communistic ideals of the country, was it tactful of her to wear stockings other than cotton. Few sharper contrasts exist than that between Berlin and cities like Moscow or Leningrad. Berlin is still in the midst of its mad post-War gayety. Its night life is more brilliant than that of Paris. In Moscow, at night, there is silence in the long chilly streets. The beggars will not come until dawn.

In Russia, offers of marriage are as casual as an invitation to cocktails in America. It took twenty-four hours to obtain a divorce (only one party need apply); it took a great deal less time to be married. During her five weeks in Russia, Miss Bourke-White received five courteous, if not modest, proposals. She returned to the U. S., however, with no Russian husband.

She did bring back, however, a keen curiosity concerning all things European. While Miss Bourke-White will continue this winter her explorations into American industry, she plans next summer to return to Germany and Russia.

Miss Bourke-White has been an associate editor of FORTUNE since its inception.

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Sun bathing . . . and all recreational features. Booklet. *Managing Director*, Clement E. Kennedy.

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What it Does and How to Do it

This booklet sets forth—

1. The reasons for a budget in business.
2. How each part of it should be prepared.
3. The principles of its effective operation.

Particular attention is directed to the booklet at this time, because of the peculiar importance of the budget in the control of finances and improvement of organization.

The present edition is a second printing, revised and enlarged, of the original issued by Ernst & Ernst in 1925. It has forty pages with six exhibits. *Mailed on request of nearest office.*

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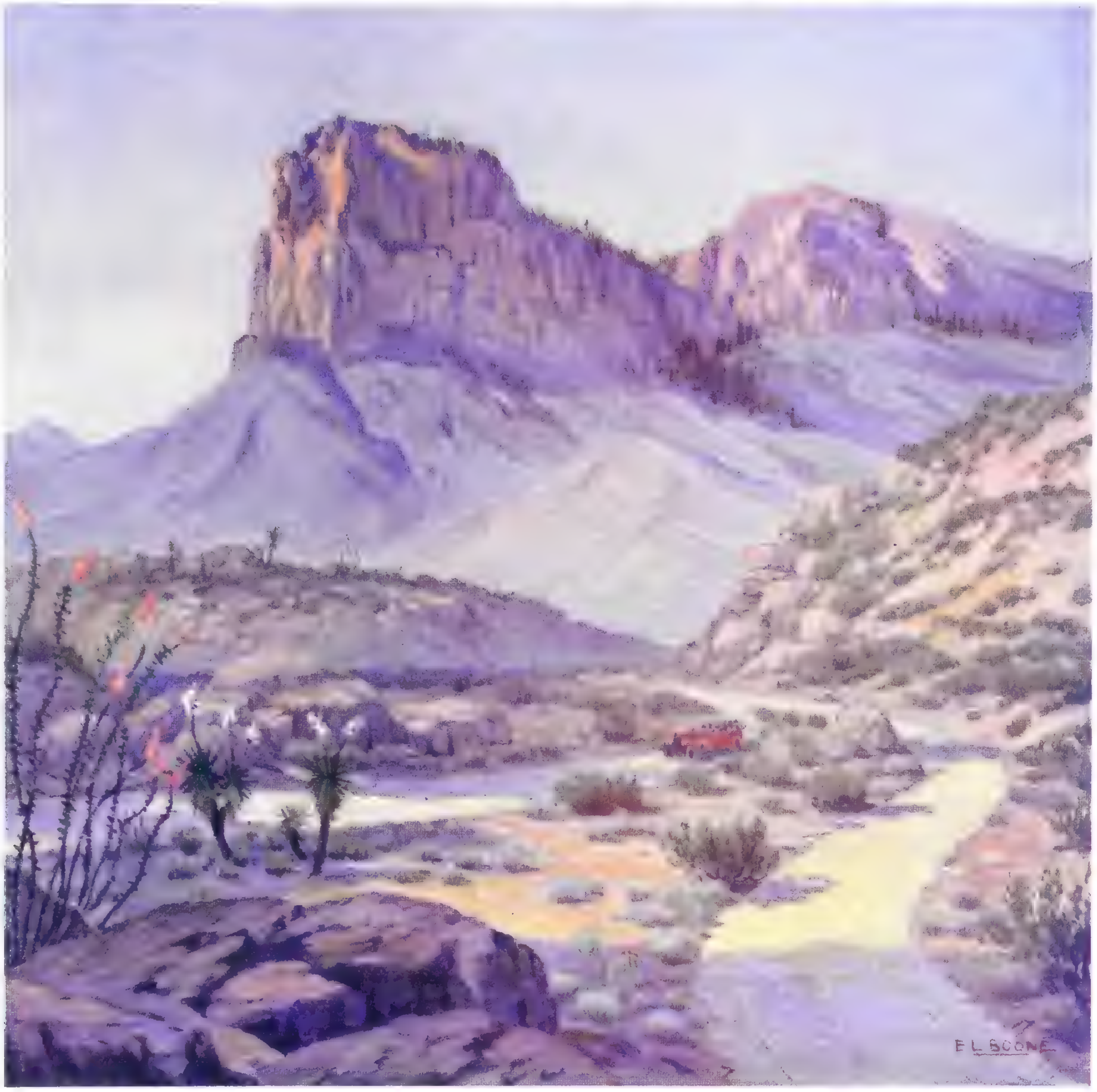

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On the new highway from El Paso to Carlsbad Caverns National Park (largest, most spectacular caves known to man) your SUNLIT TRAIL circles the massive base of Signal Peak and El Capitan pictured above. Here the highest point in Texas (10,000 feet), here a view magnificent, here the thrill of the "great outdoors." . . . Daily bus service, El Paso to Caverns and return.

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SCORES of Bellanca owners have proved that the single-engined cabin plane is indispensable to modern business. The great majority of Bellancas in service today are working for business men. In every field of aircraft operation, these swift, sturdy, efficient planes earn the highest praise for their economy and their perfect safety. The Bellanca carries almost 1,200 lbs. payload at 145 miles an hour. The time gained for the business executive amounts to a definite advantage over his rivals . . . a fact recognized by the prominent men who have bought the Bellanca as "America's finest airplane."

COMPLETE SPECIFICATIONS OF ALL BELLANCA MODELS, BUILT TO CARRY 6 TO 14 PERSONS; ALSO A SUMMARY OF OPERATING COSTS—ON REQUEST

Bellanca *Pacemaker*, H. F. McLean, Ltd., prominent Canadian contractors. Business and personal travel.

Bellanca Skyrocket, Treadwell Yukon Co., Ltd. Whitehorse, Yukon Territory. Transport of personnel and supplies.

Bellanca *Skyrocket*, Mr. W. C. Grunow, president, Grigsby-Grunow Co., Chicago, makers of the Majestic Radio. Business travel.

Bellanca *Pacemaker*, Mr. [illegible] Co., [illegible] makers of [illegible] and drilling machinery. Business and personal travel.

Bellanca *Pacemaker*, Mr. Wm. M. Campbell, Campbell-Taggart Associated Bakeries, Inc., Kansas City. Business and personal travel.

Bellanca *Skyrocket*, Mr. Nathan L. Jones, president, Western Telephone Corporation of Nebraska, Omaha. General business use.

Bellanca *Skyrocket*, A. O. Smith Corporation, Milwaukee, makers of pipe for oil and gas lines, and automobile chassis frames. Executive travel.

Bellanca *Pacemaker*, Greenfield Tap and Die Corporation, Greenfield, Mass. Executive travel, sales promotion, emergency deliveries.

Bellanca *Skyrocket*, Mr. Wilbur May, May Department Stores. Personal and business travel.

Bellanca *Skyrocket*, Mr. L. J. Shields, president, National Battery Co., St. Paul. Business travel.

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New York Office: CHRYSLER BUILDING
Canadian Distributors: BELLANCA AIRCRAFT OF CANADA, LTD., MONTREAL

BELLANCA

BELLANCA

Bright Young People

[*Continued from page 59*]

ish priests were sent across the
annel to convert the heathen
itons, devout Celts gathered in
at neighborhood to drink and
athe in the miraculous waters
St. James's Holy Well. Be as-
red that no upright Church of
ngland Guinness has ever at-
ibuted miraculous powers to
uinness's stout. Even in Arthur
uinness's time the Holy Well of
. James's was too polluted to
e for anything more than cool-
g pipes. Just the same, the
gend helped sell many a barrel.
Guinness today is the world's
rgest brewer of stout. They
ew over 115,000,000 gallons a
ar and print enough stout la-
ls to put a girdle round the
rth.

• • •

Even more important than
e Guinness brewery are the
uinnesses. After the War, the
d leaders of smart London so-
ety were dead or nerve-shat-
red or financially ruined. There
mained the Guinnesses. They
ere talented. Their sons were
ndsome and their daughters
vely, the titles of the heads of
e family were granted by
ueen Victoria and had none of
e uncomfortable newness of a
everhulme or a Beaverbrook,
d best of all they were ex-
emely rich—even by American
andards. London society even
to Buckingham Palace had a
sh of Guinness to the head—
day a London affair without at
ast a brace of Guinnesses is un-
inkable.

They are a legion in them-
lves, and there is the word of
e editor of *Debrett's Peerage*
at Guinness is the most com-
icated family in the book. For
e purpose of this article they
ay be divided into Old Guin-
sses and Young Guinnesses.
f the Old Guinnesses, three are
nportant. Lord Iveagh, Lieu-
nant Colonel Rt. Hon. Walter
dward Guinness, and Hon.
rthur Ernest Guinness, all
rothers.

Rupert Edward Cecil Lee,
arl of Iveagh (pronounced Iver)
head of the family and chair-
an of the brewery board. He is
tremely abstemious and has
ery little interest in brewing;
griculture is his real hobby and
e has a model farm at Woking
Surrey as a training ground
for young men anxious to emigrate to Canadian farms. While at Cambridge, Lord Iveagh was a notable oarsman. He won the Diamond Sculls at Henley in a famous race with Blackstaffe, the champion that is still discussed by old Light Blues. One of his sculls splintered against a hidden rock 200 yards from the finish. In politics he was a member of the House for seventeen years. On entering the House of Lords in 1927, his Southend seat was contested and won by his wife who, with her money, her interest in farming, her inheritance of her husband's political career, is a British parallel to Ruth Hanna McCormick They are seldom seen at parties of the Young Guinnesses.

"Rupert," explained the late Lord Ardilaun's secretary, "was always the soul of stability."

Ask a political reporter about Colonel Walter Guinness, and he will answer immediately, "The man who stabilized the British egg." When he was Minister of Agriculture in the last Conservative cabinet, British eggs were sorted, graded, candled, etc., for the first time. Colonel Walter is the most politically active of the elder Guinnesses and probably the least pompous. He displays a certain sly humor in the House, and though personally a teetotaler and a non-smoker he has broken more than one lance with Lady Nancy Astor, famed prohibitionist.

Though not a man at St. James's Gate will admit it, the real head of the brewery is not Lord Iveagh, but his brother Arthur. Guinness never advertised until two years ago. Astute Arthur Guinness realized that with modern standards of living and the world-wide spread of luxuries, there were fewer and fewer people who really liked the taste of such a stalwart plebeian brew as stout. On the other hand, it contains 8 per cent of alcohol and it is nourishing. A vigorous advertising campaign was started, concentrating on the medical properties of stout. "Guinness is Good for You!" "Guinness for Strength!" It is a fact that two large glasses of Guinness are apt to put anyone to sleep. Most company directors would gloss over such a fact, but not honest Arthur

THE most completely equipped resort in this country for the treatment of cardiac disturbances, including the only natural calcium chloride Nauheim brine springs in America. For literature address The Medical Department, The Glen Springs, Watkins Glen, New York.

GLEN SPRINGS
THE AMERICAN NAUHEIM
WM. M. LEFFINGWELL, PRES.

The SAVOY-PLAZA *New York*

HENRY A. ROST *President*

IDEALLY located on Fifth Avenue at the entrance to Central Park, near business, transportation, theatres, shops. The Plaza and its newer associate, the Savoy-Plaza, offer the highest standards of hospitality, unexcelled cuisine . . . National Hotel of Cuba, Havana, will open December 15, 1930.

HOTELS *of* DISTINCTION

FRED STERRY *President*

JOHN D. OWEN *Manager*

The PLAZA *New York*

Investment and Brokerage Service

MEMBERS
New York Stock Exchange
Chicago Stock Exchange
Cleveland Stock Exchange
Philadelphia Stock Exchange
Detroit Stock Exchange
Cincinnati Stock Exchange
New York Curb Exchange
New York Cotton Exchange
Chicago Board of Trade
Chicago Curb Exchange Assn.

Private Wire Service

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NEW YORK CLEVELAND CHICAGO

Offices in twenty-eight cities

"SEA BEE II"

Owned by—C. B. Mitchell, Esq., Santa Barbara, Cal.
Built by Lake Union Dry Dock Co., Seattle, Wash.
Length 62 feet—Powered by Scripps Twins, 200 H. P. each. Speed 20 M. P. H.

The capability of SCRIPPS Twins to successfully power those cruisers of larger size, where heretofore cumbersome, slow speed motors have been thought an absolute necessity, is emphatically demonstrated by a number of recent installations.

SCRIPPS power plants, 15 to 400 H. P. high speed and medium duty, provide efficient power for boats 18 to 100 feet.

SCRIPPS MOTOR CO., 5844 LINCOLN AVENUE, DETROIT, MICH.

SCRIPPS

· THE MOTOR THAT CROSSED THE ATLANTIC ·

Guinness. He admitted it. Pamphlets were issued on "Guinness for Insomnia." "The wearing and devitalizing results of want of sleep are well-known," they read. "The soporific effects of Extra Stout are sometimes remarkable and doctors have declared it is preferable to opium . . ."

The Old Guinnesses don't drink anything, and the Young Guinnesses, their nephews, nieces, and cousins obviously don't drink stout. There is nothing soporific about them. They and their friends form a noisy inner world known to society reporters as the Bright Young People. They are notable for two things, magnificent weddings and uproarious parties.

Guinness weddings are almost as newsworthy as Lipton yacht races. For the past three years, they have left a trail of pearl-strung bridesmaid rotogravure pictures through the entire illustrated press.

Now for the parties. The Guinnesses invented the famous treasure hunts in which Bright Young People in roadsters would meet at one of the stately Guinness houses, be handed a series of cabalistic clues, and dash off all over London in search of the treasure. So successful were the treasure hunts that they spread to America and tied up the traffic of New York, Boston, and Philadelphia for most of one season. The Guinnesses gave a bathing party at St. George's Baths at which the helmets of the policemen who came in to keep order were thrown into the pool. This was followed by a Russian Party and a Greek Party, which attracted considerable unfavorable comment from the more conservative family journals, and finally a Baby Party at which the Bright Young People, actors, playwrights, and a few belted earls in rompers raced round Grosvenor Square in perambulators to the popping of tabloid photographers' flashlights.

It was the Guinnesses who started the fashion of midnight bathing, motoring twenty-one miles to Windsor for a moonlight swim in Cuckoo Weir, the swimming hole of Eton College.

It was Kenelm Lee Guinness who drove a steam roller over a monumental pile of tin cans to hear what a loud noise really sounded like.

It was Bryan Guinness and his wife (the Hon. Diana Freeman-Mitford) who gave an exhibition of fake modern pictures and fooled even the serious-minded Mr. Lytton Strachey into buying one for $75.

Almost the latest occasion for Brightness was the wedding of Miss Maureen Guinness to the Earl of Ava. After the reception, squadrons of Bright Young People raced down to Croydon to see "Maggie" off and drink a last toast to the happy couple. There was plenty of champagne but no glasses at the field, so the toast was drunk from the empty radiator caps of the cars. And the coming-out party last year of Lady Honor Guinness (she who at eighteen campaigned for the flapper vote) was acknowledged London's smartest entertainment.

Despite this slightly Hollywood atmosphere, all of the Guinnesses have married conventionally with the exception of Meraud, daughter of Mr. and Mrs. Benjamin Guinness. The Benjamin Guinnesses, by the way, are good friends and distant cousins of all the other Guinnesses, but they have no connection with the brewery. Meraud is a talented painter, she dresses oddly and talks loudly, exhibits at the Salon des Independents in Paris, and eloped a couple of years ago with a Señor Alvaro Guevera to the south of France.

Naturally, such a spectacular group could not long exist without being fictionized. This was done last winter by their friend, Evelyn Waugh, in his novel, *Vile Bodies*. Evelyn Waugh mentioned no names, but the Guinness type of antics and the Guinness attitude were as easily recognizable as was Rosa Lewis in the person of "Lottie Crump." London society is happy led by Guinnesses. For the serious, there is Lord Iveagh (who when he was a child spelled "wife," "yph") and the Hon. Walter, to whose home in Grosvenor Square the King and Queen yearly come to dine. There is Mrs. Richard Guinness, whose pearl earrings are the finest in England. And there are the unbelievable gay ones with the unbelievable names: Aileen and Maureen and Oonagh, the daughters of Arthur; Meraud, the artist and daughter of Benjamin, her brother Loel (married to Hon. Joan Yarde-Buller), and her sister, Tanis, engaged to the Hon. Drogo Montagu. Richard Guinness has two step-daughters whose names, by comparison, are almost normal: Zita and Theresa. One calls Theresa "Baby."

SALES ♡ ♡ STEADILY INCREASE IN KANSAS CITY

NEW IN KANSAS CITY

Many millions of dollars are being spent to rush to completion new pipelines for the delivery of petroleum products from the Southwest to the East. Kansas City is the center of this activity and the *source* of supplies. This is *new money* that is giving additional employment, a distinct aid in maintaining the prosperity of the Kansas City territory.

♡

THE *work* of making 1930 a good sales year in the Kansas City territory goes on, increasingly. At the end of the first six months, a remarkably large number of lines were holding their own with the 1929 record, or bettering it—and improvement in conditions in the last half continues. ¶ Merchants in the territory are buying with new confidence. Raw material purchases indicate a manufacturing faith in the immediate future. Millions of dollars are being spent in downtown construction; more millions in pipeline development, with Kansas City the source of supply; further millions in industrial development to meet the above-normal demand for commodities that overnight will send production demand rapidly upward. ¶ The Kansas City market was last to feel the recent general business hesitation—*and is first to respond to the new buying confidence already reappearing.* ¶ You can sell in the Kansas City territory if you have production and distributing facilities to make the prompt and economical delivery that the territory demands. Kansas City serves 19 million more economically than any other market—it can be *your* territory if you wish to cultivate it intensively *from Kansas City.*

DUSTRIAL COMMITTEE OF THE CHAMBER OF COMMERCE OF

KANSAS CITY

Nearly ¾ million people live within one hour by motor car from Twelfth Street and Grand Avenue in Kansas City, Mo.

♡

The new freight rates between Kansas City and the East have abolished the Mississippi basing line and given Kansas City a new through rate. Write for detailed information.

INDUSTRIAL COMMITTEE, CHAMBER OF COMMERCE, KANSAS CITY, MISSOURI
Please send me the facts about Kansas City. I am interested in the
____________________ industry.
Name ____________________
Firm ____________________
Address ____________________
City __________ *State* __________
(I saw your advertisement in Fortune)

ANALYZE
Your Investments Periodically

ETERNAL vigilance is the price of safety. As applied to your investments, no matter how large or small your list . . . this means a careful analysis at least every six months. It is one of the chief functions of our Investment Department to aid our clients in this important task, and we do it gladly on request.

Representatives at any of our offices will assist you—in person or by mail—if you will submit a list of your holdings to them.

HORNBLOWER & WEEKS
ESTABLISHED 1888

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DETROIT
NEW YORK
PROVIDENCE
CHICAGO
PORTLAND, ME.
CLEVELAND
PITTSBURGH

Members of the New York, Boston, Chicago, Cleveland, Pittsburgh and Detroit Stock Exchanges and the New York Curb Exchange

All American
Steel Desk

Genteel Beauty in Steel
Product of the
BROWN-MORSE COMPANY
Muskegon, Michigan

Armored Cars

[*Continued from page 47*]

stop. He must also call his office whenever he is twenty minutes ahead or fifteen minutes behind his schedule. Thus the home office always knows almost exactly where he is and can usually reach him within eight or ten minutes. There is also a group of inspectors who travel around town checking up on drivers and cargoes. The system just described is the Armored Service system; others differ from it only in detail.

Bank funds are the most spectacular cargoes, but pay rolls are the backbone of their business. There are two types of pay roll service—the delivery of the pay envelopes to the customer's office or this same delivery accompanied by the actual paying of the individual employees. A concern getting the second type of service need not worry about any detail of paying its men (except the item of supplying the money) as the transport service makes up the envelopes in its own office, ships them in its cars, sets up a pay-off desk in the customer's plant and hands each man his money while two or more armed men superintend the operation.

Nor is the service expensive. Armored has a flat charge of \$4.00 per cargo not exceeding \$10,000 and not to be delivered at more than usual speed. In addition to this charge, pay rolls cost \$3.00 per 100 envelopes, with an additional charge of two cents per each additional envelope where payment is made directly to the men. Armored pay rolls run from \$110 to several hundred thousand dollars, and the first pay roll robbery is yet to be attempted.

Other branches of money transportation include the handling of bank funds (Armored's most notable client is National City Bank of New York) and the delivery of deposit funds to banks. The day's income of the New York Telephone Co., the Brooklyn Edison Company, the Hotel Pennsylvania, Bloomingdale Bros., Frederick Loeser, Flint & Horner, New York *Times*, Sheffield Farms, and many another concern are banked by Armored and when necessary are stored overnight in one of Armored's safe deposit vaults. The smallest amount ever dignified by Armored Service transportation was the sum of eighty-one cents, which represented an overdraw made on a bank by a chain store branch. The bank wanted the eighty-one cents back to balance its books and the chain store had a rule that no employee could take any money out of the store, so the Armored people took back the eighty-one cents and, incidentally, charged the chain store more than the amount of money transported. Largest transport was the United States Trucking job, already referred to, in moving so notable a gold center as the New York Federal Reserve.

The movement of money in armored cars is perhaps most socially significant as an illustration of self-protection as distinguished from social protection. There are some 18,000 policemen in New York City, but if they were the only reliance against banditry the present security in money transport would certainly not exist. Just as the old Vigilantes of gold rush days came into existence through the bad functioning of the duly constituted authorities, so the banker and the merchant in our large cities of today have been compelled to supplement police protection with additional and private measures. It is, however, difficult to associate the armored car with the larger question of gang warfare and racketeering. The gang problem has become essentially a prohibition problem, and the racketeer has on the whole confined his attentions to the laundry man, the dry cleaner, the produce merchant, and other of our less centralized and less Anglo-Saxon industries. The armored car has demonstrated that the highwayman can be overawed by a display of strength and vigilance (for the gangster has a reputation for cowardice), and the completeness of the protection it offers is an illuminating commentary on the difference between private and public efficiency. And certainly everyone who has large sums that must be regularly transported should read in the report of every hold-up a suggestion to look into the advisability of protected transportation. But the bandit who realizes that funds carried by small armies in young forts is hard money will merely continue to seek his easy money somewhere else.

THESE MEN KNOW THE DIFFERENCE DO YOU?

The metallurgist can see it. His microscope shows a complete and uniform austenitic* structure—absolutely non-magnetic.

The metal worker who has deep-drawn, welded, machined or bent Nirosta and other high alloy steels knows that production is less expensive and more satisfactory with Nirosta.

*AUSTENITIC, a term denoting a perfectly homogeneous metallurgical structure of alloying elements in solid solution. Chrome nickel steels, only when truly austenitic, are fully corrosion-resistant in either their unpolished or polished state and offer economical characteristics of ductility and workability.

The polisher can tell the difference in a minute. Nirosta takes a high polish easily because of the uniformity obtained by the exclusive heat treatment which distinguishes this aristocrat of alloys.

The user—be he engineer, oil refiner, architect or manufacturer of countless products—will tell you that Nirosta has no practical substitute for non-corrosive and architectural purposes.

NIROSTA METAL

NIROSTA METAL PROVIDES MAXIMUM DUCTILITY AND RESISTANCE. ONLY OBTAINABLE WHEN PROCESSED UNDER KRUPP NIROSTA PATENTS BY THESE LICENSEES:

THE licensees—49 in number—representing the cream of the alloy experience and the bulk of the electric furnace ingot capacity in this country, offer ample proof of these facts. They will gladly direct you to their customers who have used Nirosta and other metals, that you may learn first-hand why Nirosta is different. Exhibit Room, Headquarters, Krupp Nirosta Co., Inc., 2638 New York Central Building, New York, N. Y.

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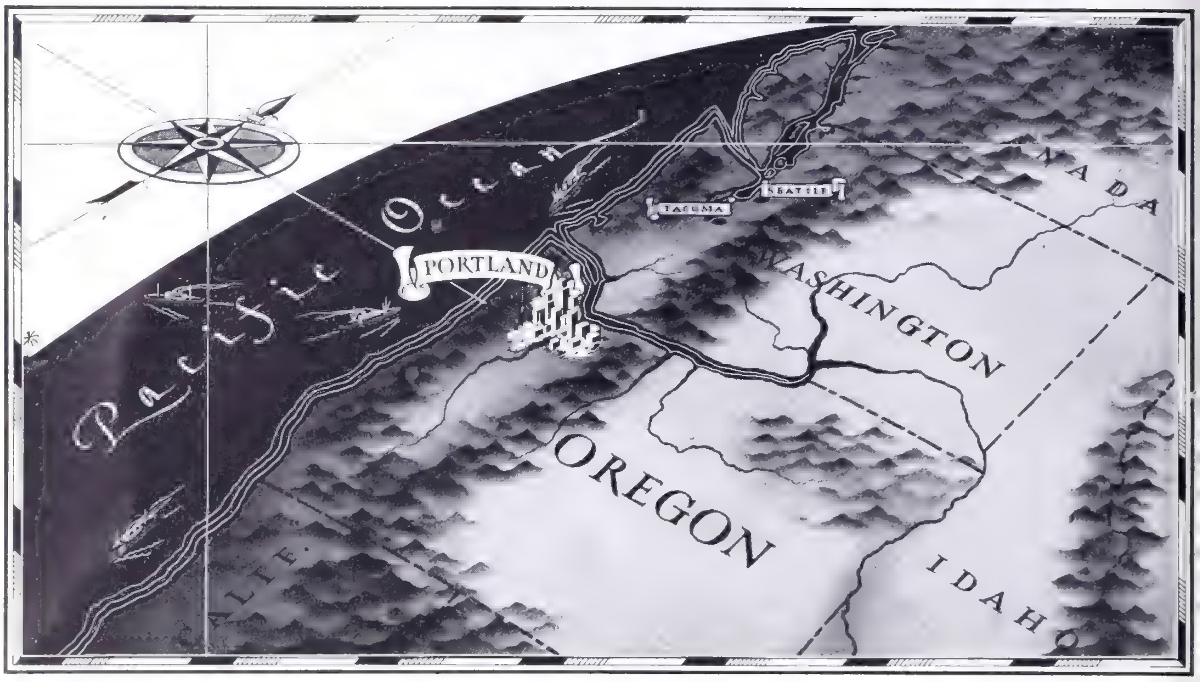
THE PACIFIC ERA IS HERE



COME ON-TO-OREGON « « « AND PORTLAND

PORTLAND . . . the seaport . . . distributing center of the Pacific Northwest . . . a busy metropolis of 301,890 people (1930 census), and the commercial capital of a contiguous market of 2,500,000 population, stands strategically at the gateway to the Columbia River Basin. Here begins the only water level route to this Empire of over 250,000 square miles; an area equal to all New England plus New York, New Jersey, Delaware, Pennsylvania, Ohio and Indiana.

Ships from all ports unload their cargoes at Portland, returning with lumber, wool, fruit, salmon, wheat, and other products. Four transcontinental railways, oceanic, coastwise and river shipping, a network of auto freight lines, 2700 miles of hard surfaced highways, give quick and economical access to the Pacific Northwest, the intermountain, and national markets.

And here living is at its best! Portland is a home city—a veritable garden spot caressed by a mild, animating climate.* Outdoor sports and gardens are enjoyed the year 'round by a home loving people (44.6 per cent of Portlanders own their own homes), who earn $304 more per annum than the nation's average.

Oregon's climate* and environments are conducive to more productive and efficient labor, healthier and higher standards of living. Portland manufacturers in several lines familiar with labor conditions elsewhere, report that the higher efficiency of workers here is equal to a saving of 15 per cent in labor costs as compared to the cost of labor in eastern and middle-western industrial centers.

Today, time and distance are no barriers to men. Why not live as you would wish to live, where *you would like* to live? The man who has attained a measure of success, who has initiative, foresight, and ambition, can achieve a greater degree of success and enjoy a fuller measure of the worthwhile things in life in Portland.

"The Era of the Pacific" has barely begun. The next theatre of national development will be on the Pacific Coast. A rich market now, it is growing bigger and richer every day. Oriental trade is forging ahead. Capital in increasing amounts is developing Oregon's basic resources. The eyes of industry are turning Westward! Get in on the ground floor!

Interesting and authoritative Industrial Data will be sent with the compliments of the citizens of Portland. *Write for it.*

Ships drop their barnacles while they load in Portland's fresh water harbor. Drydocking and scraping is unnecessary.

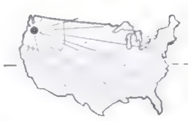
Fewer Fog Hours at Portland Harbor Entrance

Port	*Distance to Ocean*	*Annual Fog Hours* 10 year average
Seattle	117 miles	1091
Portland	**110 miles**	**541**
San Francisco	10 miles	1089
Los Angeles	24 miles	841

*PORTLAND'S ANIMATING CLIMATE

Scientists agree that man is more active physically at a temperature of 55 to 70 degrees than when it is colder or warmer and that he does his best brain work when outdoor temperature is around 40°. They also agree that Pacific Northwest climate fits these specifications exactly. Portland's average temperature for the past 10 years for January has been 39.6 degrees and for July 67.2 degrees. A seasonable climate without excessive humidity—it is animating and energizing, without extremes of heat or cold.

PORTLAND, OREGON

The fresh water  *port of the Pacific*

ON-TO-OREGON, Inc.
1393 Public Service Building
Portland, Oregon

Gentlemen

Please send me FREE, Industrial Data on Portland and Oregon

Name
Firm
Address
City *State*

Looking into a City: Pittsburgh

[*Continued from page 54*]

Oliver Iron & Steel. But if there is anything old and respectable and rich and independent in Pittsburgh, it is Jones & Laughlin Steel Corp., which has never merged with anything, has been financed almost entirely out of its own pockets, and earns $21,000,000 a year. And here are Mrs. Alexander Laughlin and Mrs. B. F. Jones Jr. living in Allegheny Town three months in the year, though both of them have magnificent estates on fashionable Sewickley Heights. Mrs. Laughlin was Mary Jones—her father was the founder of Jones & Laughlin, and her husband was the nephew of the other founder. Mrs. Jones is the widow of B. F. Jones Jr., one of the greatest steelmasters that Pittsburgh has ever had; and she is the mother of young B. F. Jones III, who probably inherits more Jones & Laughlin stock than any other single person.

Now when Pittsburgh is glibly characterized as Presbyterian, it is necessary to remember these magnificent families in Allegheny Town, to say nothing of the old families on Squirrel Hill. Pittsburgh seemed to supply most of the aristocratic element on the Fundamentalist side of the national theological quarrel several years ago. But Pittsburgh's Fundamentalism had nothing to do with the ridiculous monkey business of Bryan and Dayton, Tennessee. Pittsburgh was defending a tradition—the faith of fathers who had built a great city and whose widows were living. The perfect cavalier of this cause was Rev. Maitland Alexander, D.D., pastor emeritus of the old First Presbyterian Church, which is right in the midst of Mr. Oliver Rea's skyscrapers, like Manhattan's Trinity Church. There is nothing ignorant about Dr. Alexander. He is a very polished gentleman, and he too lives in Allegheny Town. He also belongs to the gay New York Yacht Club and spends much time in Palm Beach. Pittsburgh Presbyterianism is no more uncivilized than Queen Victoria's Anglicanism. And, as we shall see, it is a great deal more enlightened. But also, like the Queen's cosmogony, it passes. And the active pastors are far less belligerent than Dr. Alexander. Among them, too, is found the gentleness of spirit which is inescapable in modern Pittsburgh. Pastor of the East Liberty Presbyterian Church, where the Mellons go, is Stuart Nye Hutchinson, a genuine person who has written three books: *The Soul of a Child, For the Children's Hour, Bible Boys and Girls.*

· · ·

So much for the rugged Scotch-Irish faith which erected at the confluence of Allegheny and Monongahela its greatest capital. But like every capital, it became cosmopolite. And now we find that the Rt. Rev. Hugh Boyle, Roman Catholic bishop of Pittsburgh, has a flock of 571,000 souls. He has 707 priests and 509 churches, eighty-one of which are within the cramped city limits of this one-time Presbyterian town. His signature is good in any Pittsburgh bank for as much money as he requires.

And besides the Catholic bishop, a great figure in Pittsburgh is Edgar Kaufmann. The most important annual show in America from an artist's point of view is the International Exhibition of the Carnegie Institute. Aside from artists, 5,000 to 10,000 Pittsburghers visit the show every Sunday of the fall and winter (a far higher percentage of the population than is to be found in New York's Metropolitan). This year the show rejoiced in many a handsome nude. There was also a gleaming, pink-coated gentleman out of *Spur.* And a picture called *Excursion*, showing an erect figure in rough woolen shirt, holding a walking stick. At this Pittsburghers stopped abruptly, not only because they saw an exceedingly handsome man with fine, dark eyes but because, as they exclaimed: "Why, that's Edgar Kaufmann." Mr. Kaufmann is Pittsburgh's brilliant and biggest merchant.

In a sense, Mr. Kaufmann is antithetical to old tradition. Old ladies and gentlemen, their sons and daughters, are somewhat fixed in their shopping habits, in a good old Pennsylvanian way. They go to McClement for flowers, to Weldin or Steinsapir for party engraving, to Grabowsky for furs, to Grogan (Pittsburgh's Tiffany) for jewels and wedding presents, to C. C. Mellor for pianos. It is perfectly respectable to shop elsewhere, but many a Pittsburgher never remembers where. Into this comfortable shopping atmosphere the great department stores have shouldered themselves. The first one to do so was Joseph Horne's, established so long ago that every good Pittsburgher considers it essential to have credit at Horne's. The Hornes are *Social Register* people and the late F. Joe Horne married a daughter of B. F. Jones. But since such a large proportion of the population lives on the average $1,700 wage, Pittsburgh has become a department store city, does more than half its retail business over the counters of a dozen of them. The blue bloods may buy in New York. The average Pittsburgh matron finds that she can very well satisfy her taste at Kaufmann's, Joseph Horne's, Gimbel's, Rosenbaum's, Boggs & Buhl's, McCreery's, or Frank & Sedar's.

And here is where Edgar Kaufmann has performed a miracle with his modern selling methods and his Bordman Robinson murals. For he has developed the largest and best-appointed department store in Pittsburgh. And possibly the best explanation of his $31,000,000 business is his own cosmopolitan taste. He loves beautiful things, has a theory that beautiful line and color ought to be emphasized in merchandise of whatever price. His small, new house in the Fox Chapel district is packed with millions in tasteful decoration—old masters, old furniture, tiles.

Most department store customers come from the "South Hills," on the other side of the Monongahela, and notably from Dormont. They come through the hectic Liberty Tubes, which burrow through a mountain from Dormont to the river. These were the first extensive tunnels built for gasoline traffic, the forerunners of Manhattan's Holland Tunnel, and they are hectic because policemen are rare and anybody drives just as fast as he likes. The Pittsburgher has other tunnels. He has funiculars that go straight up the sides of the hills, and he has grades that coil up them like snakes. Most of all, he has bridges—great black steel legs (and three just painted with white Mellon aluminum) stretching out across both rivers, so that from the air, Pittsburgh looks like a giant spider aswim on the water. There are 850 bridges in Allegheny County worth some $20,000,000.

Unusual though Pittsburgh hills and tunnels and bridges may be to a Chicagoan or Bostonian and unusual though its quaint but charming aristocracy may be, living so mildly in the midst of such apparent industrial confusion, nevertheless, most of its people are, it must be assumed, not very different from all manner of Americans elsewhere. Over their bridges in street cars, Fords, or Cadillacs, they come to the Golden Triangle to buy the things and to see the movies that all America loves. Indeed, what is peculiar to Pittsburgh, aside from such commendable features as its abundance of fine hospitals or its handsome patronage of the Theatre Guild, can best be summarized under two heads: Mellons, Steel.

III.—The Mellon Raj

ACTUALLY, the Mellons are not very well-known in Pittsburgh. True, the grocers spell melon, Mellon, and the latter is vaguely equated with omnipotence. But what the man on the street could factually tell you about the Mellons could be printed on a postcard. Yet perhaps half the people of Pittsburgh have some sort of daily dealings with this family.

Individually its members are easily accounted for. There was Judge Thomas Mellon, who left law and started T. Mellon & Sons, bankers, in 1869, and in his time ranked with Judge Reed (father of the present Senator) and B. F. Jones as first citizens of Pittsburgh. Judge Mellon died in 1908, after the death of his sons Thomas and George. They are the only three Mellons who have died.

Judge Mellon had three other sons, the eldest of whom is James, a delightful and subtly humorous gentleman of eighty-four who spends most of his time either on an expensive yacht or in a very simple house in a very simple town in Florida. James's son, William (W.L.) is president of the enormous Gulf Oil and is active in politics.

The Judge's other sons are Andrew William, seventy-five, and Richard Beatty, seventy-two, commonly denoted in Pittsburgh by the initials A. W. and R. B. These two have been as close as David and Jonathan ever since Judge Mellon set them up in the lumber business from which they simultaneously, soon, and discreetly got out. What they are worth today is beyond the realm of ascertainable fact. New fortunes have derived from large-scale participations in so many enterprises. It is believed that A.W., the elder, was somewhat the leader during the half-century of fraternal partnership. But R. B. has definitely been in command of the Mellon Raj since A.W. went to Washington, and it is, of course, during this decade that the greatest expansion has taken place. In any case, the two brothers seem to be remarkably similar—A.W. perhaps more subtle, R.W. more robust (he has ridden his horse over fences within the year).

As everyone knows, A. W. has a daughter, Ailsa, Mrs. D. K. E. Bruce, who resides in New York, and a son, Paul, an able youth just out of Yale and Cambridge, who appears to be reluctant to assume the arduous responsibilities of Mellon finance.

R. B., too, has a daughter, Sarah. She married Alan Scaife, who manages the first manufactory established west of the Alleghenies (Wm. B. Scaife & Sons Co., 1802) and serves on important directorates. And of particular importance is the fact that R. B. has a son, R. K. All who seek him will quickly and easily find R. K. seated at an aluminum desk in the vice presidential office of the Mellon National Bank. Handsome, energetic, democratic in his interests and aristocratic in his tastes, R. K. resembles nothing so much as the ideal heir to a vast fortune.

There are vast and complex enterprises in Pittsburgh which have almost nothing to do with the Mellons. Nevertheless, it is difficult to overestimate the importance of Mellons to Pittsburgh. To them it has been motive, duty, devotion, and satisfaction. There is no reason why Gulf Oil should be headquartered in Pittsburgh—Gulf Oil, which by some accounts is the biggest of all oil companies and which is now erecting Pittsburgh's biggest building. No reason—except one: Pittsburgh is the Mellons' home. A. W. never bought a house in Washington; no more would he or R. B. or W. L. let Gulf wander off to New York.

To sketch in barest outline the structure of the Pittsburgh-Mellon empire, the place to begin is the bank where R. K., despite his thirty directorates, has begun his work in life. Mellon National is, of course, the biggest bank in Pittsburgh as to deposits and depositors. But while it is the cradle of the Mellon Raj and the tutor of her sons, it is no longer her structural center. That key position is occupied by Union Trust Co., a state bank two blocks up the street, which owns not only Mellon National but also Farmers' Deposit, Union Savings, and City Deposit Trust—a total of $500,000,000 in deposits. The nature of this bank must be firmly grasped. It is the product of the mind of Andrew Mellon, who founded it in 1889 at the age of thirty-four and was its first president; and it is also the product of the life of H. C. McEldowney, who works hard, says little, and believes in God.

The Mellons first knew Mr. McEldowney as an earnest young man looking for a job in a bank. He has been president of Union Trust for nearly thirty years and is certainly dean of the Mellon associates. Over his large executive signatures there has been evolved the Union Trust policy, which is to say, the fundamental Mellon policy, the policy of reserves. With a nominal capitalization of $1,500,000, President McEldowney and Chairman R. B. Mellon have piled up a surplus and undivided profits of $60,000,000. The capital stock has never split. There have been no mergers. (Merging is not a Mellon characteristic. But of course some merging Mellons have done—notably Standard Steel Car into Pullman Co.) UnionTrust's 15,000 shares are the nation's most expensive, have been quoted as high as $22,000 (George F. Baker's First National has never topped $15,000), pay a dividend of $200 plus $6.00 at Christmas, and at an average price of $17,000 a share, net yield, including the Christmas present, is 1.21 per cent.

P. & A.

RICHARD K. MELLON

As his father R. B. founded a bank in North Dakota, so R. K. enterprisingly develops a bank in the Schenley district. Two college presidents and the head of Mellon Institute are on the board. The banking room is beautiful, and the bank statement, though in relatively small figures, is strong.

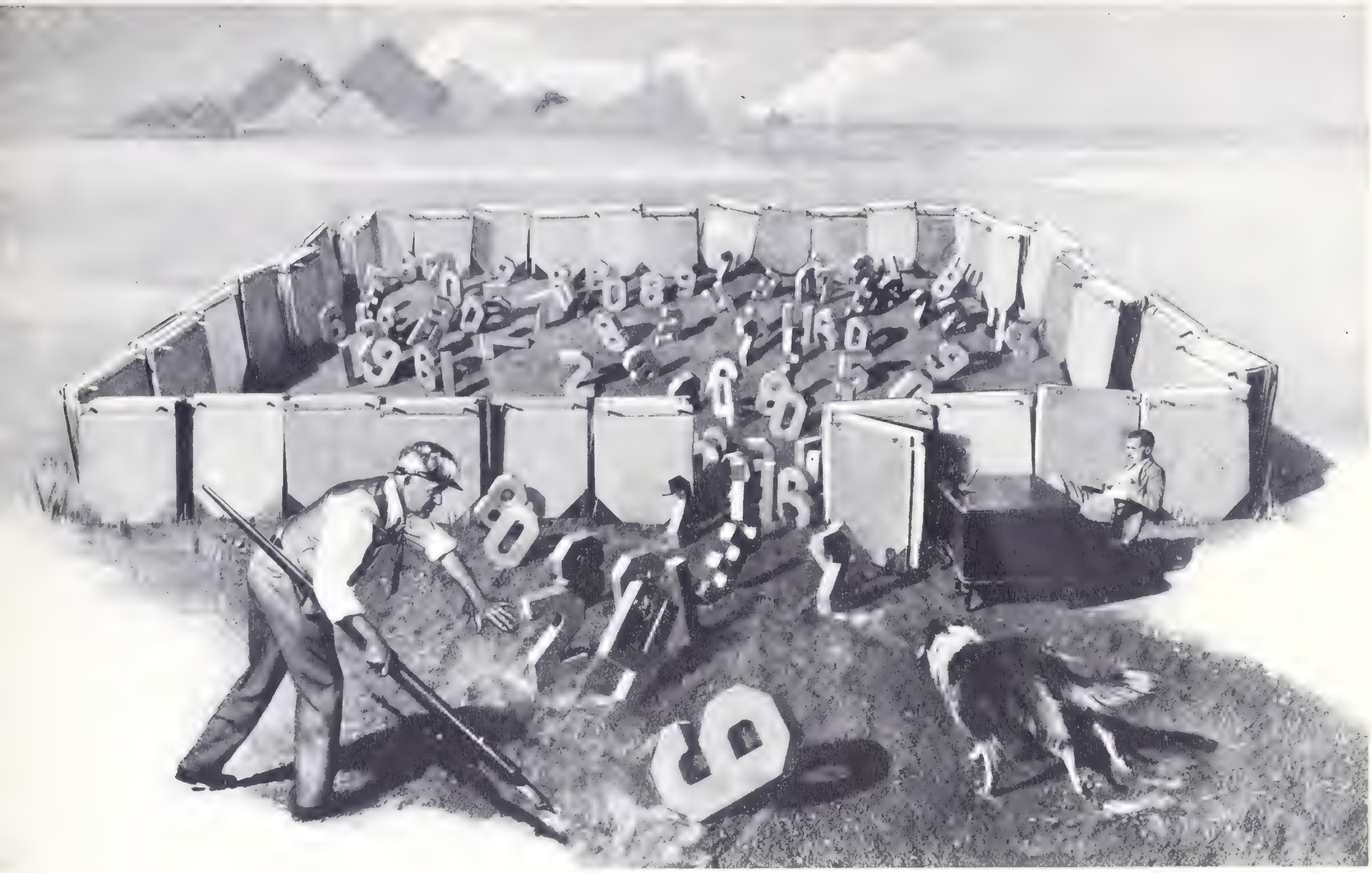
Union Trust is the investment institution by which the Mellons originated $200,000,000 of new financing for Pittsburgh last year, participating in issues of the nation's leading bond houses at the same time. A peculiarity of this financing is the virtual guarantee attached to it by the policy, inaugurated by R. B. at Mellon National some years ago, of retaining in its own portfolio some portion of every issue floated or even recommended.

The principle of reserves is the basic one that Richard B. Mellon brings to his fifty-odd directorates, and his son Richard K. to thirty-odd directorates and to the thirty-three banks of the Mellbank Corp. in the vicinity of Pittsburgh. It is the principle by which William L. presides over Gulf Oil. It is a principle dear to F. A. Leovy, president of fourteen Gulf subsidiaries. It is the principle that makes the Mellon fortune racial in scope, with a feeling for the nation's destiny playing through it. No Mellon company will ever be found paying its life out in dividends. Neither does one hear the jaws of steel-trap minds snapping out Mellonian decisions. For each new enterprise there is much quiet mental toil, investigation, weighing out, and a cautious but enduring decision. Like dinosaurs, Mellon enterprises are born from eggs.

It was that colorful Pittsburgher, J. M. Guffey, with his 80,000 barrel a day Lucas gusher at Spindletop, who put Texas on the volume production map. But it was Andrew Mellon who, as owner of most of the bonds, obtained control when the company went into the red in 1906; and it was Andrew Mellon, first president of the resulting Gulf Oil Corp., and his nephew, W. L., who made an average of $16,000,000 a year available for expansion during the next twenty years. The ante has been trebled in the past five years. As a result, Gulf is the world's third largest producer. In Louisiana, Arkansas, Tennessee, Oklahoma, Kansas, Kentucky, and California, Gulf owns or leases more than 5,500 wells on 340,000 acres; in Mexico and Venezuela, 302 wells on 193,000 acres. But these immense producing resources are as nothing in comparison to its reserves. In reserve, Gulf holds no less than 7,577,000 acres of probable oil land, or more than fourteen times the area of its production. It earned $45,000,000 or $9.83 a share in 1929, out of which it paid its cautious $1.50 dividend. But even at this rate, the stock-holding Mellons treated themselves liberally, for Aluminum Co. pays no dividend whatever on its common, though it earned $25,300,000 in 1929, or $11.18 a share.

Some of the profit on the steel erection in the new Gulf Building will stay in the Mellon Raj. For it happened that while Andrew was a director of the Pottstown Iron Co., a tall engineer named McClintic, who looks even taller than he is, and a stocky engineer named Marshall, who looks shorter than he is, approached him with the desire of setting up in business for themselves. They had just retired from the Shiffler Bridge Co. Mr. Mellon considered them, and after a typical Mellonian decision had been reached, there was born the firm of McClintic-Marshall, fabricators and erectors of structural steel. One of their earliest ventures was the Marshall Field store in Chicago, and they had so much to learn then that some of the steel was shipped to Chicago by express. Besides half of the nation's bridges, they built the lock gates of the Panama Canal; on Manhattan were steel-erectors for the Grand Central Office Building, the Graybar Building, and are now erecting the new Hudson River Bridge, the Waldorf-Astoria Hotel, the Stone & Webster Building. In Pittsburgh, they built the Koppers Building, are now erecting the Gulf Building. The 1929 business was over $50,000,000; and of their 600,000-tons annual capacity, 240,000 can be produced in Pittsburgh. Mr. McClintic and Mr. Marshall are also part owners of the Mellon-financed Koppers companies, which are also buyers of steel from McClintic-Marshall.

There is this peculiarity about Pittsburgh



Still waiting for the final figures~

How often can you get together the figures ou want on scheduled time—whether it be weekly ayroll distribution, monthly statements, semi-annual nventory, or the final figures at the end of the year? Don't you frequently have to wait for some department's or branch's figures to be *driven* in?

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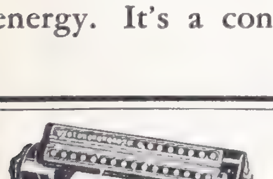

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industries: they are not merely financed—they are lived. Every Pittsburgh concern looks as if it were put there to stay. And every executive looks as if he were in there to stay. But this peculiarity is particularly true of things like the Union Trust Co., McClintic-Marshall, the Aluminum Co. of America. The most that one could make out of aluminum in 1850 was a watch-charm for the King of Siam. When Charles M. Hall brought his process to Pittsburgh from Oberlin, Ohio, and when Alfred E. Hunt joined him, aluminum was not—and it never has been—merely a manufacturing problem or a technological problem. Aluminum is an education. In order to be sold it must be lived, and no one has grasped this idea more clearly than the chief Aluminum stockholders, who are Pittsburghers to the core. The Mellon National Bank has done itself up in aluminum and points out that it saves fire insurance thereby; Brother Andrew and Brother Richard own all-aluminum automobiles, built specially by way of living experiment; President Roy A. Hunt, son of the founder, has lived aluminum since boyhood, when he entered the New Kensington plant as an apprentice—his executive offices are aluminum-furnished, and he uses aluminum ink in his advertisements; chairman Arthur V. Davis—one of the few Mellon men who might be called "dynamic"— has an aluminum watch, and has developed a waterpower system to expedite the manufacture of this, his favorite metal.

But the Mellon Raj, like Pittsburgh, is never a finished product. Across the face of the waters, in 1914, moved the metaphorically shirt-sleeved figure of H. B. Rust, who is and will remain one of the epic figures of Pittsburgh. He is connected through his mother with historic Robert E. Lee. He learned steel in the Pittsburgh Department of Public Works as a builder of bridges, and later with Colorado Fuel & Iron and Rust Boiler Co. Bought out by Babcock Wilcox, Mr. Rust was free to develop, with H. W. Croft of Harbison-Walker, an idea which has since revolutionized two vast industries—steel and public utilities. Pittsburghers tried and true, they knew what to do with this idea—they took it to Andrew Mellon. From their deliberations there arose a typical Mellonian dinosaur.

This is the Koppers Co., perhaps the most fascinating business that the 20th century has so far produced, certainly Pittsburgh's most mysterious. One is told that five men own the Koppers Co., and that these are A. W. Mellon, R. B. Mellon, H. B. Rust, H. H. McClintic, and C. D. Marshall. But what it is they own is most difficult to describe; and how much it is, is silence.

First it is necessary to understand that of all Pittsburgh resources, bituminous coal is the most important. It is important as a raw material, shipped out to every part of the country in competition with the bituminous coal of West Virginia and Tennessee. It is even more important as coke, to which state it is transformed by long baking. Coke is one of the three materials used to make pig iron, and pig iron is the basis of all steel. The fortune of H. C. Frick was based upon coke, and a turning point in the career of the Carnegie Steel Co. was its combination with the H. C. Frick Coke Co. Consequently, to say that the Koppers business is with coke is to say that its business is with the vitals of Pittsburgh.

The basis of Koppers is an oven invented by Heinrich Koppers of Germany, which not only changes coal into coke, but recovers the resulting gas, ammonia, tar, and benzol (i.e., what was formerly smoke). The two latter products are the source of 4,000 or 5,000 other things. It was the War that made the Koppers Co. From the allied nations, there had been going up a cry for ammonia, benzol, and toluol—derivatives of coal, which are so vital to modern explosives that the striking power of a nation is said to be in direct proportion to its supply of them. Of these necessities, which Germany had aplenty, the U. S. was mostly unaware. Mr. Rust set to work. For three years he-and-his built on the average of one coke plant every sixty days and a benzol-toluol plant every six weeks. And each succeeding plant embodied some improvement over its predecessors. And at the end of that time the U. S. was the greatest benzol-toluol producer in the world.

It is, literally, the smoke that used to blow down onto Pittsburgh from H. C. Frick's Connellsville inferno that has performed the Koppers miracles. This smoke comes out of the coke ovens and is transported in boa constrictor pipes to a recovery plant, which cools out the water, tar, and liquor and allows the gas to pass on to whatever outlets are purchasing it. The ammonia is combined with sulphur and shipped to the farmers of the Middle West as ammonium sulphate. The tar is manufactured (not by Koppers) into dyes, photo-chemicals, motor fuel (the benzine ring); into paints; into aspirin and pyramidon, which cure America's headaches; into creosote for pneumonia and croup; into cleanly lysol and carbolic acid; into luminol, the sedative, and phenylsalicylate, the aid to rheumatism.

But while the Koppers Co. is a magician producing all this out of its hat, it would be a waste of time to look for its plant in Pittsburgh. In Pittsburgh, Koppers has merely constructed ovens for every sizable steel firm. The 1,482 ovens at Clairton belonging to the Carnegie Co. form the largest by-product coke plant in the world. Into this plant go 31,000 tons of coal a day; out of it comes 15 per cent of the nation's coke (20,000 tons a day), together with 200,000,000 daily cubic feet of gas, which is piped up and down the Monongahela to operate every U. S. Steel open hearth in the region, approximately 90,000 daily gallons of benzol and 250,000 gallons of tar. And all this comes to life out of the smoke which H. C. Frick used to waste and dirty his neighbors with.

But Koppers Co. owns many of the sixty-nine by-product coke plants that it has built throughout the country. While Koppers does not manufacture beyond the raw material stage, it does develop markets for those who do. Wherefore Koppers has gone into business in a grand way, occupying for itself the major portion of the Koppers Building on the Golden Triangle. But as if there were not 4,000 other things to think about, the 11,000 cubic feet of gas which each ton of coal will produce every twelve hours in a Koppers oven, together with the fact that coke itself is used in the manufacture of water gas, have literally strewn the Koppers Co. over the map of the U. S. For this is their link with the public utility world; with St. Paul Gas Light Co. and with Public Service Corp. of New Jersey; with Samuel Insull and the Chicago By-product Coke Co., which supplies gas for Peoples Gas, Light & Coke Co. of Chicago; the United Gas Improvement Co. at Philadelphia, and through most of the State of Connecticut; the Boston Consolidated Gas Co.; Columbia Gas Supply Co. (Cincinnati and southern Ohio); Montreal Light, Heat & Power, Consolidated. The result is that Koppers is interested to an extent unknown in United Light & Power, the control of which it shares with Cyrus S. Eaton; United States Electric Power Corp. (Harris-Forbes), which controls Standard Power & Light (Byllesby) and Standard Gas & Electric Co., whose largest subsidiary is the Philadelphia Co., which controls most of the important utilities in and around Pittsburgh; Brooklyn Union Gas; Connecticut Coke Co. (gas); and $145,000,000 Eastern Gas & Fuel Associates (organized by Koppers), which now controls the $100,000,000 Massachusetts Gas Companies supplying the Boston metropolitan area.

So much for eggs and dinosaurs.

IV.—Steel

OLD-TIMERS claim to be able to judge the industrial pace of Pittsburgh inversely by the clarity of the atmosphere as they speed down the boulevards, through the tunnels, and across the bridges into the Triangle; and the Mellon Institute has estimated that the annual Allegheny soot-fall is from 600 to 2,000 tons per square mile. But the point to be observed here is Pittsburgh's consciousness of dirt, its passion for cleanliness. Its laundries and dry cleaners are exacting; its servants are rigidly trained to the cloth and the mop. The Pittsburgher loves white; his interiors are done up in white paint which he insists on keeping spotless. Windows of Pittsburgh houses are washed once a week—by the maid, not by some window-cleaning concern. Their curtains are fresh, their automobiles shine, their faces, hands, and fingernails are pinkly groomed. The only severe sufferers from the soot are the façades of buildings. Across the river in old Allegheny Town, Howard Heinz finds it necessary to wash his seventeen blocks of factories once a year, to manicure hands that touch food.

And what of this Heinz plant? What a monstrous Pickle it is, with its fictitious fifty-seven (for there are unofficial products, like the new tomato juice, that will be admitted to the charmed circle only at the expense of something already there); largest catsup

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And not such a very large family. Old H. J. Heinz started out in 1869 (the year Judge Mellon went into banking) by growing and selling horse-radish. His sons Howard (president) and Clifford (vice president) now own 1,000,000 square feet of glass to cover their greenhouses, purchase the crops of 200,000 acres of gardens, and maintain twenty-five factories throughout the world. Their aunt, Elizabeth Heinz, sister of the founder, married Sebastian Mueller, who is an active vice president of the business. Howard Heinz married Elizabeth Rust of Michigan (no relation to the king of coke ovens), and their two sons are John, now at Yale, and Rust, now at Choate School. Howard is the breath and life of the business. Like other Pittsburghers, he too is gentle. His favorite subject is "heartpower," which he says is stronger than horsepower. His roots are deep in the Heinz business, in principles evolved in the 19th century by his father, who was one of the early promoters of idealism in business. There are printed mottoes on the walls, and the 1,300 window boxes of the old Romanesque buildings are gay with ivy and petunias. The factory floors are immaculate, and there are 60,000 visitors a year.

The reason why Heinz has to wash his factories once a year is that Pittsburgh is a city of blast furnaces. The blast furnace is older than Heinz, older than the Mellons, older even than old Mr. Oliver. The Anshutz furnace was founded in 1792 in the Shadyside district (now residential). The blast furnace is the prima donna of the steel industry, always spoken of as "she." All day and all night she is fed successive layers of coke, limestone, and Messabi ore; four times a day she is emptied, the separated iron and slag running down fiery trenches into ladles. Cement will be made from the slag, steel from the iron.

The chief magician of the iron world is the foreman in charge of "she." He knows how to keep his silicon below 1 per cent, his sulphur below 1/20 of 1 per cent. He knows how his furnace will act on a moist day, when she drinks in literal tons of water, the hydrogenation of which absorbs heat and throws all logical calculations awry. He knows the subtle difference between half a dozen furnaces. But he cannot tell you. He is the man of intuition, the impresario. Upon his inspired, unwritten wisdom Pittsburgh stakes hundreds of millions of its steel dollars a year.

And perhaps people usually think of the steel business as one big fire out of which comes one big metal. But of course everyone really knows better. If there are more than fifty-seven varieties of Heinz, there are fifty-seven times fifty-seven variations in iron and steel. And let alone products, there are considerably more than fifty-seven *concerns* in Pittsburgh which either make iron or steel or make things immediately out of them. For purposes of visualization only, the Pittsburgh steel world may be divided into three parts:

I.—*The U. S. Steel Corp.*, which manufactures a complete line of standard products by means of the Carnegie Co., National Tube, American Steel & Wire, American Sheet & Tin-Plate, American Bridge, Clairton Steel, and Oil Well Supply Co. (recently purchased from Pittsburgh's colorful banker, J. H. Hillman Jr.): coal mines, railroads, quarries, etc., etc. In Pittsburgh alone the Steel Corporation gives employment to more than 50,000 men, out of whose ranks have arisen many of the presidents of the individually great companies which make the greatest strictly industrial corporation in the world. These men—I. Lamont Hughes of the Carnegie Co. and F. W. Waterman of National Tube have the largest organizations—are experts in steel rather than finance. Together with many other subsidiary presidents elsewhere, they are held in economic unity by corporate principles emanating from 71 Broadway, New York, where the Steel triumvirate—Morgan, Taylor, Farrell—presides.

Blank Stoller

GEORGE M. LAUGHLIN JR.

Chairman of Jones & Laughlin. grandson of James Laughlin, who was B. F. Jones's first partner.

II.—*The diversified independents, of which the leader is Jones & Laughlin*, whose Aliquippa plant does everything to steel, from the ore through pig iron, steel ingot, bloom, and billet, to finished pipes and wire. Since its founding in 1850, two successive Joneses and three successive Laughlins, including the present chairman, George M. Laughlin, have developed it into the fourth largest steel business in the U. S. But the presidency has gone outside the owning families since the death of the great B. F. Jones Jr. in 1928, and was given this year to George G. Crawford, who had made his career in U. S. Steel.

Many another independent, diversified, but somewhat more limited in scope than Jones & Laughlin, inhabits Allegheny land, notably Pittsburgh Steel Co. (1929 net, $4,500,000), Allegheny Steel Co. (1929 net, $3,300,000), Oliver Iron & Steel, Lockhart Iron & Steel Co., and Weirton Steel Co.

III.—*The specialized independents*, who are legion. Outstanding among them is Blaw-Knox, run by the Lehmans, specializing in steel for concrete construction and electro-forged gratings, gross business $17,000,000. And A. M. Byers, which goes no further than iron, but whose new $10,000,000 plant has brought into being the marvelous new process of mechanical puddling. And Crucible Steel, in which the Mellons are interested. And Vanadium Alloys Steel. And Spang-Chalfant, venerable manufacturer of pipes. And Davison Coke & Iron, which specializes in pig iron and coal by-products.

Generations of steel and iron families have built around the iron molecule and its strange actions a lore to which the layman cannot presume. Steelmen from top to bottom constitute a sort of fraternity. They have their own jokes, which are meaningless to outsiders. But in one iron and steel matter, the public has taken an enormous interest—the important matter of public relations. In November, 1930, Heinz celebrated sixty-one years of work free from labor troubles (see page 144). No iron or steel company could do that. But, if one leaves history and comes to the present, the amazing truth seems to be that the 100,000 men who work in Pittsburgh steel mills are about as happy as the 2,500 who work for Heinz. The difference which has come over steel and hence Pittsburgh (because it is steel rather than Heinz which is the criterion) can be simply illustrated in two sentences: (1) in the depression of 1892, a decade before U. S. Steel was born. there occurred at Homestead, near Pittsburgh, one of the worst strikes in the history of the industry, symptomatic of nearly a century of quarrels between capital and labor; (2) in the depression of 1930 Charles M. Schwab, at the Iron & Steel Institute before all the overlords of steel, made the astounding statement that "we will carry everybody connected with the steel industry safely through." To this Jones & Laughlin can add the specific fact that in October they had on their pay roll 97 per cent of the men who were on it a year before—most of the men were working shorter time, but everyone was earning something. What is true of Jones & Laughlin is true of U. S. Steel, where it is even more significant since the Steel Corporation is anything but a family affair.

Neither U. S. Steel's Farrell in New York nor Jones & Laughlin's Laughlin in Pittsburgh is an industrial philanthropist, the type of Golden Rule employer who has always made a sporadic appearance in industry. They speak today not from their individual kindly hearts, but from the council table of a civilized industry. And that industry the second or third greatest in the country. And that industry still remembering the times when it was a by-word for oppression. To steel has come not merely common humanity, but reason and policy and responsibility.

The Steel Corporation reached this goal through the slow and even overly cautious statesmanship of its late great Judge Gary.

Office of the JERSEY JOURNAL, *Jersey City, N. J. The desks and chairs of wood make this room friendly...comfortable...efficient*

BETTER WORK

ITH THE WARMTH AND FRIENDLINESS OF

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THE TREND in modern office furnishing is to provide better working onditions, more efficient business tools.

Executives, realizing that they accomolish more in congenial surroundings, emand office furniture of wood—and pply the same principle to their entire rganization. For workers of all classes espond to the appeal of wood office furiture. They like its warmth . . . beauty . . friendliness. It adds interest to their ork...encourages whole-hearted coperation.

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Modernistic desk and chair of wood in the office of the JEWEL TEA COMPANY, *Barrington, Ill. The "natural" swirls, grain and curves of wood make it especially well adapted for this type of office furniture*

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WOOD OFFICE FURNITURE

Jones & Laughlin reached it more quickly through the maturing sense of responsibility in the family leaders.

But in both cases there has been another factor which, quite as important as all the goodwill in the world, has debrutalized the iron and steel business. That is technology. Steel mills are no longer properly described as hells. They are more nearly described as a series of tracks and electrical impulses. But while most the mechanization of steel has necessarily been done in Pittsburgh, nevertheless, Pittsburgh has not achieved wide renown in the field of radical technological experiment.

V.—Technology

WHY has the $2,000,000,000 U. S. Steel Corp., dealing with the production of iron, one of the least understood of the elements, no research laboratory as famous as Bell and General Electric? Why is Jones & Laughlin, eighty years old, only now beginning to develop a laboratory? Why are Pittsburgh steelmen paying heavy royalties to Armco of Ohio for the use of the modern process for the continuous rolling of sheets? Why did H. C. Frick and the Steel Corp. after him allow $2.00 worth of smoke to escape from their beehive ovens for each of the thousands of tons of coal that they carbonized daily for thirty-four years? Why, when the by-product oven finally came to America, was it installed by the Steel Corp. in Joliet, rather than by Carnegie in Pittsburgh or by Jones & Laughlin or Pittsburgh Steel or the Olivers or the Lockharts? Why was neither puddling nor the Bessemer nor the open hearth invented in this greatest iron and steel center of a nation that was then becoming the largest per capita consumer of iron and steel in the world? To put the most fundamental question, why did this iron city defer the making of steel until 1875, twenty years after the invention of the Bessemer furnace, with the U. S. already producing 375,500 tons of steel a year?

No doubt there are good explanations for these questions, for steel is as ramified as life. For present purposes, we venture the observation that Pittsburgh is no pioneer. Pittsburgh, as has been said, is a Pennsylvania city, which means that it has many traits in common with Philadelphia, which means that it is basically conservative. Pittsburgh started life as the spoiled child of Chance, its father: a trading center fed by an endless stream of new blood flowing westward down the rivers and in wagons. And Pittsburgh started life as the spoiled child of Nature, its mother, who concealed in the neighboring hills boom resources of coal, iron, oil, and natural gas. The resulting city has had many things to do, but exploration has not been one of them.

Nor has selling been one of them. Pittsburgh does not know how to sell for the very good reason that what it makes is usually not something but only part of something else. The public does not buy coke ovens. When Robert Grant of General Motors is not selling automobiles, all of Pittsburgh must perforce make less steel. And only when Lucius Boomer undertakes to fill the biggest hotel on earth can McClintic-Marshall erect a new Waldorf-Astoria. Pittsburgh Plate Glass, which does a $17,000,000 business, spends but $100,000 a year on advertising, and that reluctantly and mostly on behalf of their paint division. For they argue that glass is glass. An expensive plate glass-consciousness campaign would merely help the business of their indistinguishable competitors.

For similar reasons Pittsburgh is neither a blatant nor a booster city.

We must not distort the picture. Pittsburgh is essentially American and, to a Frenchman, would no doubt appear to have all the American characteristics in normal proportion. But to an American the differences between Pittsburgh and the other cities are more interesting than the similarities.

The difference is illustrated in the matter of aviation. Pittsburgh makes a great many of the things which go into aëroplanes. Yet Pittsburgh was the only American city of importance that did not, as it were, fly the Atlantic with Colonel Lindbergh; and it had no suitable air field until every backwater town in the land had played hob with its budget to make one. But now that Pittsburgh has an airfield, it is a triumph of engineering. It happened this way.

Mrs. Henry Rea, who owns the skyscrapers, has a son who, when very young, required the services of a tutor named George Hann. Two years ago Mr. Hann (who had risen through the Oliver estate to be one of the city's leading attorneys) observed that Pittsburgh was not on any air system. The New York-Chicago line passed over the hills to the north without a thought to his great city. The first thing he had to do was to organize Pittsburgh sentiment. This he did not only by ballyhoo, but in one quick, spectacular maneuver. He took 100 leading Pittsburghers in a special train to Long Island, where dozens of planes were landing and taking off in quick succession. First the youngsters and finally each and every oldster in the party took a ride. When they got home, this potent group formed Pittsburgh Aviation Industries Corp. With the help of the state, they caused to be built a $250,000 air route from Philadelphia to Pittsburgh and then undertook the construction of an air field. There was, of course, no flat spot to be found (one good reason why Pittsburgh took slowly to air). The mere removal of dirt for this field cost $1,000,000. But, however slowly, Pittsburgh has a way of bringing things to success, and on October 25, 1930, the first transcontinental ship of the T. A. T.-Western Air Express landed passengers in Pittsburgh. And the able Mr. Hann conceives that the most important air route of the country will be New York-Philadelphia-Pittsburgh-St. Louis-Los Angeles.

Now the point of this story is simple. Pittsburgh builds solidly after others have experimented with enthusiasms. And this is what seems to have happened in the matter of research and technology in industry. Long years ago Pittsburgh had in its midst one of the most original minds of the country—George Westinghouse. But it is only today, after the passion for technology has swept American industry, that Westinghouse is beginning to emerge as a true symbol of Pittsburgh. Only last month old Pittsburgh erected a monument to him. George Westinghouse grasped more inventive ideas than any Pittsburgher ever has. He was a great adapter with a lucid, industrial mind. He it was who first understood that one essential of high speed is a brake and by the invention of the air brake increased the speed at which trains can safely travel from twenty-five miles an hour to the present seventy or eighty. And it was Westinghouse who launched the alternating electrical current and neglected his air brake company to fight Edison's direct current with a kind of titanic zest. This revolutionized the American electrical world; made possible the modern super-power, the $1,000,000,000 utilities system, and makes his name, in this field, quite as historic as the more adroitly publicized name of Edison (again an illustration that Pittsburgh is not so good at selling).

The modern Westinghouse is a projection of George Westinghouse, which is to say that its corps of researchers, most of them college graduates with special degrees, roll up a bill of about $10,000,000 a year in Westinghouse experimental laboratories. New kinds of motors, turbo-generators, alloys, radio tubes, circuit-breakers, toasters, and stoves have issued from their brains in magnificent profusion, while Westinghouse Air Brake, through its Union Switch and Signal subsidiary, has refined automatic signal systems to the point where signals are shown in the cab as well as out on the track. Not all of these ideas originated with Westinghouse. But most of them did, and the point to grasp is that all of them issued from a laboratory.

The smallest thing that can be said of Westinghouse is that it is half as large as General Electric. Otherwise it is infinite, manufacturing many thousands of varieties of appliances, some of which dwarf the freight cars that carry them away. And the most descriptive thing that can be said of this giant, one of whose manufacturing aisles in East Pittsburgh is nearly a mile long, is that it is not afraid to step into the dark. For the modern radio world came into being no otherwise than by the decision of H. P. Davis, Westinghouse vice president, to put KDKA on the air with a pre-scheduled program. The characteristic of radio, that it can be heard by any number of receivers, was at that time considered an imperfection to be overcome by long expensive years of research. KDKA wiped those hypothetical years off the slate of industrial time.

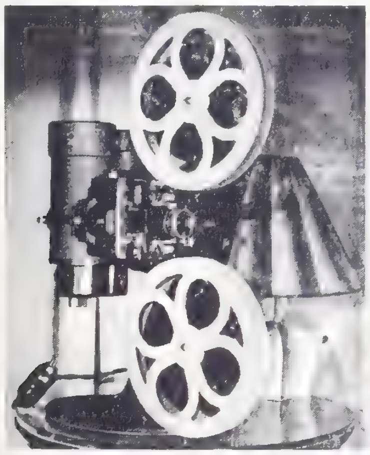
Pittsburgh loves KDKA and has named an avenue KDKA Avenue. Through KDKA the voice of George Westinghouse, which once seemed to be crying in the wilderness, has been heard and answered. For today

[*Continued on page 146*]

DEAR DAD:

"The one thing we want—Filmo"

Filmo 70-D. "Master of all personal movie cameras". Seven film speeds, three-lens turret, variable viewfinder. $245 and up with Sesamee-locked Mayfair case.



Filmo 57 Projector. Powerful 250 watt direct lighting. Silent movement. Absolutely flickerless. Automatic operation. $198 and up with carrying case.

". . . a good soldier you've been this year, answering our foolish demands and our genuine needs with equal lavishness. You've given us just about everything we could desire . . . everything, that is, except one thing—a Filmo movie camera. And we've waited until now to speak of it because we'd like to make our first movie on the happiest day of the year—Christmas.

"You'll want us to have a Filmo, Dad. You can have even more fun with it than with Junior's electric train. We'll have movies of the children at school, our travels and vacations, and our backyard play. And you'll have movies of your fishing trips and your golf foursomes. And all together we'll have something infinitely fascinating and dear to us!

"With the Filmo Projector, we'll see these precious movies over and over again in the living room, keep memory alive and ever refreshing as long as we like. And we can have our own professional movies at home, too,—from the Filmo Library.

"We know we want a Filmo, because it stands to reason that a movie camera made by Bell & Howell, who make the big cameras which take the movies we see at the theater, must be finely made and dependable. Most all our friends own Filmos, too, and we know from what they say it is so simple to operate that any of us can run it.

"We want you *in* on our gift, Dad, and you could select nothing so all-inclusive in its sentiment as Filmo. So this is your little flock's supreme desire for the year, Dad, and we know you'll be the same good sport you've always been—on Christmas morning."

With love,

Mother Bell and Dorothy

All Filmos use 50 or 100 foot films

For black and white pictures, Filmo Cameras use Eastman Safety Film (16 mm) in the yellow box—both regular and panchromatic—obtainable at practically all dealers' handling cameras and supplies. Filmo Cameras and Filmo Projectors are adaptable, under license from Eastman Kodak Company, for use of Kodacolor film for home movies in full color. Cost of film covers developing and return postpaid, within the country where processed, ready to show at home or anywhere with Filmo Projector.

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Faces of

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Eugene R. Black, governor of the Atlanta Federal Reserve Bank, who looks like Andy Gump and does not mind being told so, bluntly gave the Investment Bankers Association a few of his ideas on depression and its causes: "We have been living in an automobile, a Frigidaire, a radio era and have been sitting in an atmosphere of a Corona-Corona. We cannot pay our debts and remain in that atmosphere. Let us not fool ourselves. We cannot have any permanent prosperity when there is a load of debt around our necks . . . I do not agree with those men who say that in America there must be no retrogression from the present high grade of living." (Herbert Hoover said just that, on October 2, 1930, to U. S. Bankers in Cleveland.)

P. & A.

The articles Thomas F. Woodlock has been publishing since he left the Interstate Commerce Commission have greatly interested railroaders. A drastic proposal of his is the creation of seven rail czars.

Keystone

A gracious gesture to the memory of the late great William Boyce Thompson was the election of his widow, Gertrude Hickman Thompson, to the chairmanship of the board of the Magma Arizona Railroad, which is controlled by Colonel Thompson's Magma Copper Co. Mrs. Thompson shares honors as a feminine railroad head with one other woman: Mrs. Sarah Drain Edenborn, who, succeeding her husband, ruled Louisiana Railway & Navigation Co. for two years.

International

Hard times mean nothing to Mitzi, who is eighteen years old and of Persian extraction. For when Mitzi's mistress, Mrs. Maude F. Ide, of San Gabriel, California, died, she willed that her house and $15,000 be placed in trust "for the purpose of providing upon said premises a home and proper care for my cat, Mitzi, in case it survives me, so long as it shall live."

Pratt & Whitney Aircraft Co., important United Aircraft subsidiary, has elected a new president: Don L. Brown. He succeeds Frederick B. Rentschler, who becomes board chairman.

P. & A.

To many an industrialist Howard Heinz, president of H. J. Heinz & Co., sent out engraved invitations to come to an "international banquet." Occasion was the dedication of an employees recreation building. Speakers included Herbert Hoover (by radio) and Sir Henry Thornton.

Keystone

At Chicago's conference of major industries, Robert E. Wood, president of Sears, Roebuck, developed an interesting economic thesis:

"In 1860 45 per cent of our people were between the ages of twenty and fifty, 46 per cent were under twenty, and 9 per cent were over fifty. In 1950 the proportion between twenty and fifty will remain the same, but the proportion under twenty will fall from 46 per cent to 27 per cent and that over fifty will rise from 9 per cent to 28 per cent. What does that mean translated into merchandising? It means that, as an older people, older in the sense of age average, the demand for goods and the balance of sales will be greatly changed. It means that the infants' wear department will be relatively less important and that golf goods may become more important. I leave to your imagination the more profound effects in economics that this single change in age distribution will bring . . ."

© Keystone

A $270,000 consignment of orchids was recently sent from Bound Brook, New Jersey, to be installed in the new Cleveland branch of the famed Thomas Young Nurseries [FORTUNE, February, 1930]. Parmely Herrick, son of the late Myron T., is president of the branch.

he Month

he basic fact about any industrial
aterial is its atomic structure.
o photograph this arrangement
vitally important in steel, rubber,
ayon; etc.) has always been a pro-
ess of many hours for each ex-
osure. Now Professor George L.
lark of the University of Illinois,
ne of the country's outstanding
adiological experts, announces the
erfection of an X-ray tube with
n intensity high enough to take
ich photographs in seconds or even
ss. Thus a series of exposures can
e made in a few minutes, and the
ate and course of the changing
toms can be studied for the first
me. The industrial importance of
his is great. The X-ray already has
mproved rayon manufacture, the
old rolling of metals, and many
nother process. Professor Clark
escribes his tube as "essentially a
upermicroscope going on where
he microscope leaves off, clear
own to the ultimate atoms them-
elves."

merson D. Owen, advertising
anager of New York's Hotel Lex-
gton, was riding in a Fifth
venue bus when he had an idea:
hy not donate a daily 500 loaves
bread from the hotel's bakery to
ed the city's unemployed? Not
nly did American Hotels Corp.,
hich controls the Lexington, adopt
e idea, but hotels throughout the
ountry are showing interest. If
very hotel in New York took up
e plan, there would be over
,000 loaves available daily.

Keystone

That the trustees of the British Museum should choose for the new wing a design by an American is extremely flattering to the architect in question if not to his British colleagues. According to Sir Joseph Duveen, who is giving the wing and therefore should know, the trustees have picked a design by John Russell Pope of New York City. His *kudos* is increased by the fact that the new wing is to house the Museum's most famous possessions, the splendid Elgin Marbles. Outstanding works of Mr. Pope are the Scottish Rite Temple and Constitution Hall (D. A. R.) in Washington, D. C., the projected Yale Gymnasium, the American Battle Monument at Montfaucon, France.

Underwood & Underwood

After spending twelve years and $100,000 in the attempt, the International Ladies' Garment Workers' Union has succeeded in "organizing" Milgrim, fashionable Manhattan dress shop. Milgrim, in front of whose store eighty pickets have been arrested in the course of the union's current general strike against the couturiers, recognizes the union, agrees to the union wage scale. David Dubinsky is secretary-treasurer of the union and leader of the strike. He is thirty-eight, was born in Brest-Litovsk, Poland, was exiled to Siberia by the Czarist Government for labor agitation.

Wide World

Hiram Percy Maxim, inventor of the Maxim silencer and son of the inventor of the Maxim gun, believes he has found a way to prevent noises from coming in an open window. His device, which appears in the picture, works on the same principle as his gun silencer: the sound waves are trapped in winding passages and bounced back and forth until they expire. A noiseless electric fan draws the air in through the silencer, which is felt lined. Says the inventor: "Maxim can silence any noise that comes out of a pipe."

P. & A.

A name great in Jewry and in chemistry is that of Chaim Weizmann, English industrial chemist who discovered that bacterium known as *clostridium acetobutylicum*, which turns corn into acetone, Butanol, ethyl alcohol, and methanol. Great Britain's recent bearish pronouncement on the Hebraization of Palestine received no rebuke more impressive than the resignation of Dr. Weizmann as president of the Jewish Agency and of the World Zionist Organization.

© Underwood & Underwood

One result of the reorganization of the $23,000,000 Empire Steel Corp. that took place when Pickands, Mather acquired a dominating interest was the election of a new board chairman: Paul Llewellyn, formerly president of Interstate Iron & Steel.

P. & A.

Under the aggressive leadership of Andrew J. Maloney, one-time coal miner, Philadelphia & Reading Coal & Iron Corp. is doing much to keep away the wolf that waits at the door of every hard coal company. Most recent move: the trading of its power properties to National Power & Light Co. for a block of the latter company's stock.

Looking into a City: Pittsburgh

[*Continued from page 142*]

there is not an important industry in this tangle of 300-odd industries that is not laying aside generous portions of its income for research and technological development. For instance, National Tube has developed a new rotary electric weld for its pipes. The Pittsburgher has suddenly discovered that science offers him a chance to multiply his genius which, as we have pointed out, is a genius for combination.

Leaving the industrial river banks and coming back to Schenley Park, where the skyscraper Cathedral of Learning is almost completed, we find the new enthusiasm for technology about to be enshrined in a Greek temple both grand and chaste. It is the Mellon Institute, an institute utterly unique, whose aim is not merely to seek knowledge, but to apply it directly to industry; to create the next seventy-five years.

The Institute is no charity. Neither is it a place where scientists of Einsteinian caliber gather for dispassionate research. It is a laboratory under the direction of that affable universalist, Edward R. Weidlein, maintained for the convenience and at the expense of concerns who are answerable to their stockholders. Even a competitor of the Mellon Raj may here investigate his special problem, paying, like anyone else, the researchers' salaries and the laboratory expenses. This payment is called a fellowship, and some fellowships run as high as $100,000 a year. Total of all seventy-one fellowships at present is about $1,000,000 a year, a 16 per cent increase over that of a year ago.

Pending the erection of the snow-white Grecian temple, the Institute is housed in a dun-colored stone building, very overcrowded and somewhat hectic. It is plunged into a cacophony of research to delight the heart of the most ardent Pittsburgher. Here Portland Cement has erected 350 experimental walls. Here Heinz developed the new rice flakes, Simmons investigates sleep. Here is a fellowship to discover how to make glass from vegetable matter; and here are incongruous others for the study of corrosion, dentistry, electrical precipitation, fish, carbonated beverages, fertilizers, ores, fibres, dry cleaning, laundering, matches, petroleum, zinc, rubber, and wrought iron—a fascinating, never-ending symposium of modern industrial technology.

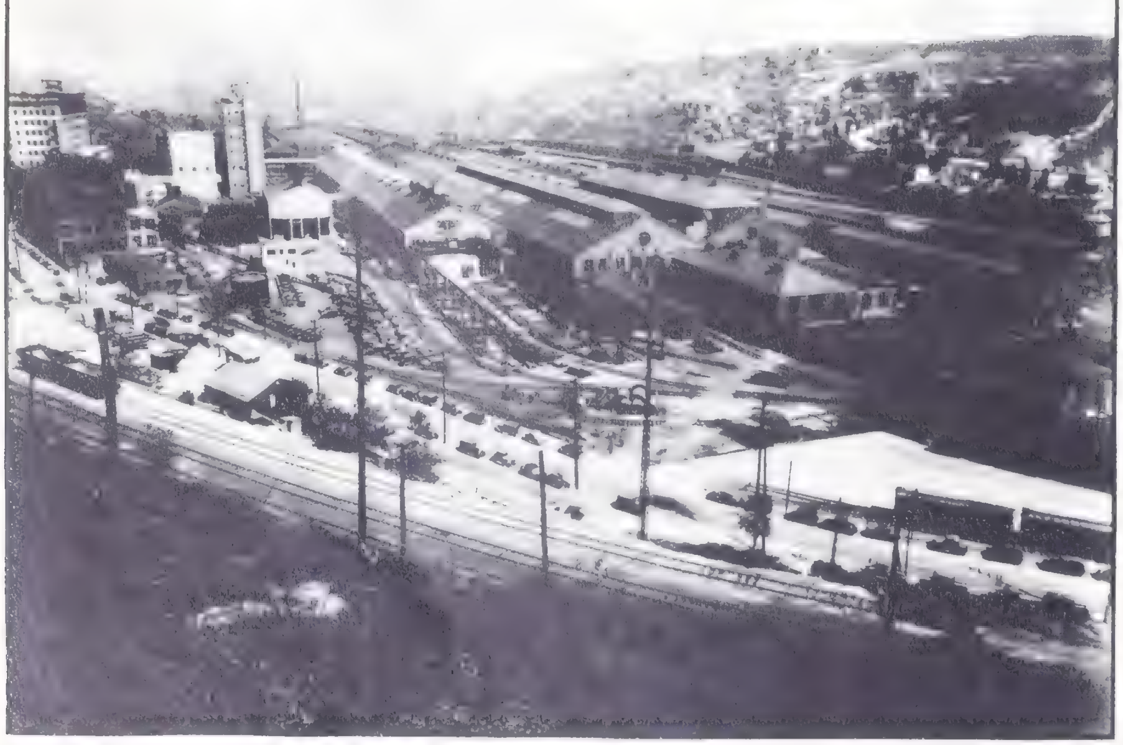
What will arise out of this no one can tell. But Andrew Mellon has guessed. The industrial logic that has carried Pittsburgh from the tiny Anshutz furnace to the ownership and control of a public utility gas system as far-flung, as magnificent as the superpower of Morgan, is Mr. Mellon's logic, too. If any institute could be invented to teach Pittsburgh how to carry this logic further it is his.

The journalist who presumes to summarize the destiny of 1,000,000 souls who have brought into being, among other things, the largest tonnage-producing area of the Pennsylvania Railroad, takes upon himself heavy responsibilities. But in so far as this city can be summarized, the facts are thus. During the last decade, the population of metropolitan Pittsburgh increased at the rate o 15 per cent, which is somewhat greater than the rate of most large cities. During the same decade, however, the dollar-value of industria products (exclusive of building and of public service corporations) declined from $2,400,000,000 in 1920 to about $1,700,000,000 in the boom year of 1929—a total decline o $700,000,000. If these figures are adjusted by the basic price indices, that for 1929 is found to be substantially in excess of that for 1920; yet there is here no growth comparable to the growth of younger and more western communities, which have boomed into prominence during the past decade.

The fact is that a new era is being forced upon the people of the Allegheny. Their natural resources and their brawn can carry them no further. Their gas has all blown away, their oil dribbles into mere barrels, their wonderful crown of coal has been usurped by West Virginia and Tennessee. Nor did they ever have the right kind of iron ore to make steel. They are up against competition in resources from forty-eight fat states. And they have one solution. That solution was first discovered by George Westinghouse. More recently it has been discovered by the Koppers Co., through which Pittsburgh supplies half the Atlantic seaboard with gas, though it has no gas left under the ground. That is a technological solution. A similar solution awaits the coal problem. Its fulfillment will come neither from the bowels of the Carrie furnaces nor even from the mottoes on the Romanesque walls of Heinz. Its fulfillment will be born from those ample intellectual temples of Schenley district—the Cathedral of Learning, the Carnegie group, the Mellon Institute.

• • •

Last March 25, on his seventy-fifth birthday, the admiring and loving citizens gave Andrew Mellon a banquet at the Pittsburgh Golf Club—an exclusive club without a golf course. He arose to make a speech. Very timidly, very modestly he read from a typed manuscript words which he had chosen from seventy-five active years. He said that he was not deserving of all the kind things that had been said of him during the evening. He said that he would rather hear praises from this gathering than from any other gathering. He said, after tracing the history of Pittsburgh, "If I were given the opportunity to exchange my own period of time for any other, I would choose without hesitation the next three-quarters of a century and, needless to add, I would live it in America and preferably in Pittsburgh."



Courtesy Westinghouse Electric & Manufacturing Co.

THE ROMANCE OF THE MONONGAHELA

The modernization of the steel mills which is eliminating Pittsburgh smoke, has also toned down the glow of the mills at night. Nevertheless, A. H. Gorson has painted Pittsburgh darkness as Pittsburghers like to think of it.

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- Pennsylvania R.R. Co.
- Southern Pacific Company
- Union Pacific R.R. Co.

Industrials
- Amer. Radiator & Standard Sanitary Corp.
- American Tobacco Co. (Class B)
- E. I. du Pont de Nemours & Co.
- Eastman Kodak Co. of New Jersey
- General Electric Co.
- Ingersoll-Rand Co.
- National Biscuit Co.
- Otis Elevator Company
- United Fruit Company
- U. S. Steel Corporation
- Westinghouse Electric & Mfg. Company
- F. W. Woolworth Co.

Oils
- Royal Dutch Co. (New York Shs.)
- Standard Oil Co. of California
- Standard Oil Co. (New Jersey)
- Standard Oil Co. of New York
- Texas Corporation

Utilities
- American Tel. & Tel. Co.
- Consolidated Gas Co. of N. Y.
- Western Union Telegraph Co.

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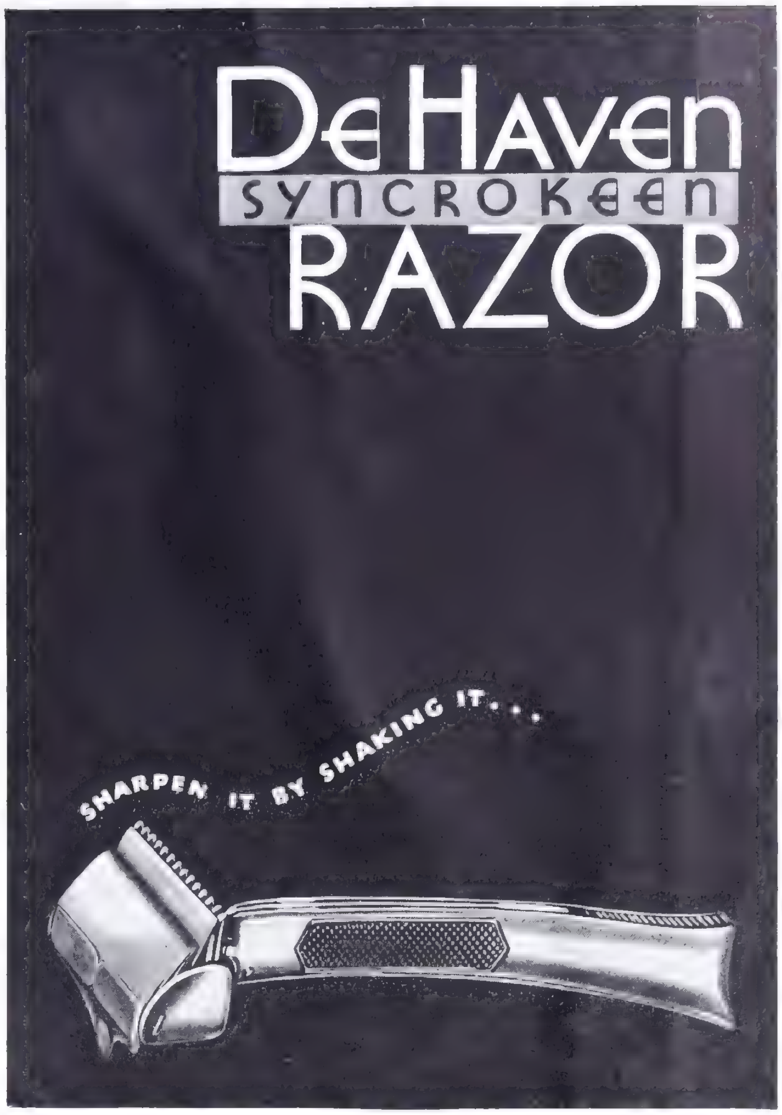

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The DeHaven Syncrokeen Razor is sold at most of the better shops. Club model, chromium plate, $10. Director's model, gold plate, $15. Descriptive booklet on request. If you cannot purchase the DeHaven locally, order direct from the DeHaven Razor Sales Co. of New York, 11 West 42nd Street, New York City.

These shops among others will gladly demonstrate this remarkable razor
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SPRINGFIELD SYRACUSE KANSAS CITY SAN FRANCISCO

JUST as the Pittsburgher passes red-hot blooms through rolling machinery to squeeze them into definite shapes, so the rolls of FORTUNE have shaped the story of the Allegheny, which, now that the steel is cool, can be submitted to examination.

And first of all the journalist with an eye for defects notes that he has squeezed out of his story Pittsburgh's notorious Herron Hill. This is the roughest and toughest spot between Philadelphia and Chicago, where number games, slot machines, speakeasies, and bawdyhouses have made nightmares of a dozen police commissariats. What is worse, this Hill is not tucked away in the outskirts of the city, but rises right out of the financial district, so that every tycoon and rajah drives around it on his way to and from his home and his office. Yet never has it been exterminated.

The FORTUNE journalist notes that other journalists not only do not fail to mention Herron Hill, but usually start their stories of Pittsburgh from that lively spot. But here he takes strong issue. For he cannot understand how a description of the Hill, which differs not very radically from other active American slums, would further any estimate of Pittsburgh's economic position in our present civilization. Were all the bawdyhouses closed, the Pittsburgh Coal Co. would, so far as he can see, still be in the red, by virtue of the favorable freight rates given to the southern operators. And should the Hill thrive lustily and lustfully for the next seventy-five years, the destiny of the laboratories in the Schenley district, working out Pittsburgh's technological future, would not seem to be endangered in the least.

And then, too, there is that alarming statement which this journalist has made about Pittsburgh's being a *gentle* city. From what aberration of intellect and enthusiasm did this statement arise? Frankly, this. The journalist went out to the Allegheny dressed in metaphorical shin guards. Heavy upon his heart lay the vision of the typical stogy-chewing Pittsburgh baron, brutalized by steel, hardened by competition. Yet in not one of nearly 100 interviews was the intruder either bullied or reviled, and having been bullied and reviled elsewhere, he naturally came to the conclusion that this Allegheny psychology is not the two-fisted affair it is supposed to be.

Let the reader grasp the point clearly. The Pittsburgher will fight, and fight ruthlessly. He has a good knock-out. But he does not like to start business that way—his first instinct is to be friendly. This is a habit of mind which can best be described (if the reader knows his U. S.) as Pennsylvanian, and more especially Philadelphian. Indeed, the psychological similarities between Pennsylvania's eastern metropolis on the banks of the Delaware and this western one at the head of the Ohio can scarcely be overemphasized. And the most outstanding similarity is this one of gentlemanliness.

Take as an example J. H. Hillman Jr., to whose interests a whole section of our story could well have been devoted. His father started as a small coal broker, and now he himself is at the head of a banking system second only to the Mellon system. He it is who financed the pioneering A. M. Byers Co. and owns one of the largest blocks of the stock. With typical Pittsburghian love of combination, he also controls Spang-Chalfant, makers of iron pipe. And he has built up Pennsylvania Industries, Inc. and Pennsylvania Bankshares & Securities Corp. to their present combined total of $17,500,000 assets.

Now the word goes round that Mr. Hillman is hard-boiled and ruthless, wherefore the said journalist prepared himself. But without reason. He found a man who, like all Pittsburghers, hates publicity, who nevertheless, as soon as he understood what the journalist was trying to do, gave orders that he should be accommodated. Because Mr. Hillman has downright ideas, because he can keep several corps of stenographers working at high speed, because he can hit hard when anything gets in his way are none of them reasons for overlooking the natural instinct for kindliness that is written plainly in his manner and upon his face.

And in this connection it will be said that the present article has devoted too much space to the Mellons, at the expense of other Pittsburgh powers, in answer to which this journalist wishes to point out that an outline of the Mellon Raj is really the shortest cut to the understanding of all Pittsburgh systems and interests. Differences in details there certainly are. But Mr. Hillman's Associated Banks, with their $226,000,000 resources (including First National), are gathered around Peoples-Pittburgh Trust Co. in very much the same way as Mellbank and other Mellon banks are centralized by the Union Trust Co. And Andrew Mellon's system of more than 100 directorates (before he resigned them) was, from a national point of view, of the same species as Mr. Davison's (around Davison Coke & Iron), Mr. Lehman's, Mr. Flannery's, or Mr. Hillman's: the same species carried to a more national conclusion.

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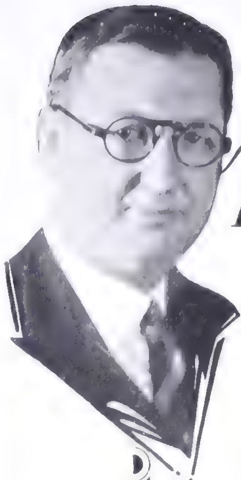

A Personal Invitation to Hotel Hollenden

THE Hotel Hollenden is ideally located for the convenience of the visitor whether he is in Cleveland on business or pleasure. Within a block or two of the Hollenden will be found the leaders in practically every activity of the city. Just a block or two away are the theatres, the shopping centers, the banks, the Public Auditorium and the principal office buildings. Located right in the heart of things, the Hollenden has for decades served the requirements of the most discriminating visitors. Anything that is required of a good hotel may be found at the Hollenden. You are cordially invited to make the Hollenden your home when you are away from home. The Crystal Dining Room and the Hollenden Coffee Shop offer a variety of good eating places.

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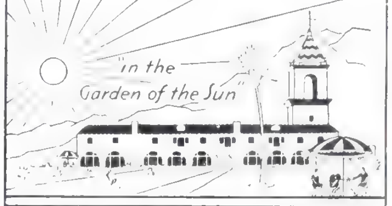

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FAMOUS SINCE 1907 NON FREEZING
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FIRE EQUIPMENT FOR EVERY HAZARD
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Saves valuable time and reduces floor space

RESISTS SCRATCHING
Imparts a tough protective film

BEAUTIFIES
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HERCULES POWDER COMPANY
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975 King Street, Wilmington, Delaware

Nitrocellulose	Explosives
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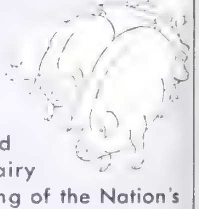

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Originated by Milo and "Aunt Sally" Jones in 1834, and now distributed by over 2000 Jones Dealers, chosen from the best and most reliable meat markets in America.

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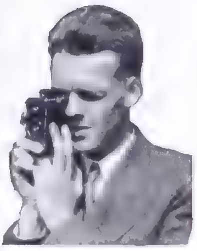
In Wisconsin's great dairy center—owned and operated by the Jones Family since 1834.



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Kaufmann Department Stores, Inc.

Fifth Avenue Pittsburg

From a Famed Industrial Chemist—

"Having just spent a most interesting and stimulating hour with FORTUNE, I cannot refrain from sending you my congratulations on having developed a publication of such remarkable character. The color prints, photography, and press work compel my utmost admiration, and the text carries romance and interest into the most unexpected corners of business."

ARTHUR D. LITTLE.

Cambridge, Mass.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

Of Fortune, published monthly at New York, N. Y. for October 1, 1930.

State of New York }
County of New York } ss

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Charles L. Stillman, who, having been duly sworn according to law, deposes and says that he is the Business Manager of Fortune, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, Time, Incorporated, 205 East 42nd St., New York, N. Y.; Editor, Henry R. Luce, 205 East 42nd St., New York, N. Y.; Managing Editor Parker Lloyd-Smith, 205 East 42nd St., New York, N. Y.; Business Manager, Charles L. Stillman, 205 East 42nd St., New York, N. Y.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) Time-Fortune Corporation, 205 East 42nd St., New York, N. Y.; Time, Incorporated, 205 East 42nd St., New York, N. Y.; Robert A. Chambers, 60 East 42nd St., New York, N. Y.; Harry P. Davison, Jr., 23 Wall Street, New York, N. Y.; William V. Griffin, 70 Broadway, New York, N. Y.; Crowell Hadden III, Trustee, Estate of Briton Hadden, 43 Exchange Place, New York, N. Y.; Edith H. Harkness, 4 East 66th St., New York, N. Y.; William H. Harkness, 11 Broad St., New York, N. Y.; Louise H. Ingalls, Navy Building, Washington, D. C.; Robert L. Johnson, 205 E. 42nd St., New York, N. Y.; Roy E. Larsen, 205 E. 42nd St., New York, N. Y.; Wilton Lloyd-Smith, 63 Wall St., New York, N. Y.; Henry R. Luce, 205 E. 42nd St., New York, N. Y.; John S. Martin, 205 E. 42nd St., New York, N. Y.; Samuel W. Meek, Jr., 65 Broadway, New York, N. Y.; General Publishing Corp., 205 East 42nd St., New York, N. Y. (Henry R. Luce.)

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state). None

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

CHARLES L. STILLMAN
Business Manager.

Sworn to and subscribed before me this 29th day of September, 1930.

[Seal]

Emmeline Dryer.
(My commission expires March 31, 1931.)

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Architects and Engineers — J. E. Sirrene & Co., Greenville, S. C.
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As Low as $150 F. O. B. FACTORY

Installation extra

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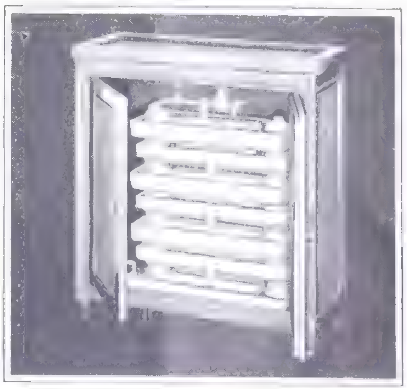
Winter is here! Will it be again the season of unhealthful overheating? Of dry air that threatens frequent colds, bronchitis, sinus and ear infections, mastoids. Of dry air, that parches and cracks furniture and woodwork, even wilts house plants, while it is stealing energy from your children and yourself? That means discomfort at over-high temperatures?

Now, a humidifying radiator banishes dry air evils

This winter your home need no longer endure dry air. The Doherty-Brehm Humidifying Radiator, the first simple inexpensive effective humidifier for steam, hot water, or vapor heating, now automatically supplies scientifically correct humidity to any radiator heated house. It is the most important advance in winter health and comfort since radiator heating was introduced. It removes the one disadvantage left by radiator heating, adding moist air health to the comfort of well-distributed warmth.



Simple and attentionless as a radiator

It fits into any radiator heating system as easily as an ordinary radiator. Just install it in place of one ordinary radiator, or as an extra unit in the system. Thereafter, it requires no attention. No moving parts to get out of order. No noise, no steam, no odor. You can even detach it and take it with you when you move. *One humidifies an average home*, evaporating as high as 100 gallons daily, automatically regulating the amount to changing weather conditions. And it heats while it humidifies, giving off more heat than a radiator of the same surface.

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In place, it has the appearance of a low-boy cabinet. It is enclosed in beautiful wood cabinets in period styles. Or in handsome metal cabinets or for recessing in the wall.

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Name.................................Address...................

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